FIREFIGHTER FATALITY
INVESTIGATIVE REPORT

Sofa Super Store
1807 Savannah Highway
Charleston, South Carolina

June 18, 2007

City of Charleston
Post Incident Assessment and Review Team
Phase II Report

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This report was prepared by the City of Charleston Post Incident Assessment and Review Team and represents a consensus view of the team.

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May 15, 2008

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Introduction

This analysis of the Sofa Super Store incident was produced by the City of Charleston Post Incident Assessment and Enhancement Review Team. The Review Team has conducted a comprehensive analysis of the incident and examined a wide range of factors that could have contributed to the tragic loss of nine members of the Charleston Fire Department. The ultimate objective of this analysis is to identify the lessons that may be learned from this incident, with the goal of reducing the risk of future occurrences of a similar nature.

This report and the resulting lessons and recommendations are specifically directed to the City of Charleston and to the Charleston Fire Department and its members. The incident analysis is equally intended to provide important information for the families and survivors of the nine deceased firefighters. The report is also intended to provide valuable information to a much larger audience of firefighters, public officials and other interested parties to help them understand the factors that contributed to the tragedy that occurred in Charleston and the lessons that should be taken from it.

The analysis is directed toward developing the most thorough understanding that is possible of the events that occurred on June 18, 2007 and the factors that contributed to those events. The Review Team assembled and analyzed a mass of information from numerous sources, including interviews, written statements and notes, hundreds of photographs, video images, audio recordings, files, records, reference sources and personal observations. During this process information was obtained from and shared with several other agencies that are involved in examining the incident from different perspectives and for different purposes, including the National Institute for Occupational Safety and Health (NIOSH), the National Institute of Standards and Technology (NIST), the Charleston County Coroner, the Charleston Police and Fire Departments, and the Bureau of Alcohol, Tobacco and Firearms (ATF).

It will never be possible to determine every factor relating to this incident with absolute certainty. The deceased firefighters were the only witnesses who could have described or explained some of the events that occurred inside the Sofa Super Store. In some cases witnesses had difficulty remembering specific points or provided information that appeared to be inconsistent with information obtained from other sources. There was no indication that anyone attempted to provide inaccurate or incomplete information; the investigators accepted the information that was provided as the best recollections and interpretations of each witness, considering the stressful circumstances and emotional impact of the incident.

The investigators carefully and conscientiously attempted to interpret all of the information that could be assembled to produce a factual expert analysis of the

incident and avoided drawing conclusions from information that could not be validated with a reasonable degree of confidence. Where appropriate, the uncertainty of specific information is noted in the report.

The development of a consistent timeline for the incident was one of the challenges that had to be addressed by the investigators. Several different information sources included time references, including the computer-aided dispatch records, audio recordings of radio traffic, the radio system controller (System Watch), and the digital time stamp that is imbedded in the file with most digital photo and video images. The time recorded by each system or device depended on the setting of an internal clock and significant discrepancies were noted among the different sources when the data was compared.

The times obtained from all of these different sources had to be synchronized by determining the “correct time” and applying an adjustment factor to each source. The encoded camera time for images taken by Charleston Police Department Photographer Bill Murton was established as the “correct time”. Events photographed by Mr. Murton were then compared with events photographed by other photographers and a correction factor was established for each camera or recording device. The dispatch recording clock was determined to be two minutes and two seconds slow and the Systemwatch clock was two minutes and two seconds fast.

All time references in this report have been adjusted to the same time base, which is believed to be accurate within 10 seconds. The final compilation of corrected times uses a 24-hour clock and reports times as HH:MM:SS or as HH:MM where the seconds were not available.

This report is the second phase of a three-phase project undertaken by the Review Team. The first phase, which was conducted before the incident analysis began, produced approximately 200 recommendations for changes and improvements in the Charleston Fire Department. Many of those recommendations have been partially or fully implemented since the Phase I report was issued and many of the lessons that are incorporated in this report lead to the same or very similar recommendations.

Dedication –

This report is dedicated to the nine Charleston firefighters that lost their lives on June 18, 2007, to their families and friends, to the surviving members of the Charleston Fire Department, and to the Charleston community.

May the lessons learned from a truthful and complete analysis of this incident prevent future tragedies.

Bradford Rodney "Brad" Baity – Engineer 19

Engineer Bradford “Brad” Baity’s home town is Mocksville, NC. How he'll be remembered: As a soft-spoken man with a dry sense of humor who was quick to help others, friends and strangers alike. Brad Baity was an engineer at Station 16, a soft-spoken and smart man who sometimes impressed his buddies with his computer skills. Baity, 37, had been with the department for nine years, driving Engine 19 for Captain William "Billy" Hutchison. "He was always seeking knowledge, trying to learn new things," said Derek Noffsinger, one of his colleagues at the station. Sometimes, Baity could be found pecking on his laptop computer, doing virtual tours of faraway countries. "He would talk about how he had just visited the historic sites in Greece and Rome," Noffsinger said. Baity wasn't one to bend your ear. Amid the bustle and bravado of a typical fire station, he spoke in a soft voice. He was an aggressive firefighter. "It didn't make a difference to Brad Baity. Whatever the task was, he did it. "Like many firefighters, Baity had a second job. For the last three years, he had worked as a stagehand at the Gaillard Municipal Auditorium, the North Charleston Coliseum and other venues around the area, said Mike Coffey, a member of IATSE Local 333, a union that represents stagehands and technicians. "Brad was new, but he was always watching and learning," said Coffey, a retired Charleston firefighter himself with more than three decades of service. Sometimes, he and Baity and another firefighter/stagehand, James "Earl" Drayton, would get together and talk shop. "You get firemen together anywhere, and you're going to start telling stories," Coffey said. "That's the way firemen are." Drayton also died in Monday's fire. Baity lived in a quiet neighborhood off the bustle of S.C. Highway 61, where he leaves behind his wife, Heather, a daughter, Mariah, and a son, Noah.

Theodore Michael Benke – Captain 16

Captain Mike Benke, age 49, was a 29 year veteran of the fire service. How he'll be remembered: Benke was a big fan of the Pittsburgh Steelers. He also liked to take his son fishing, he was a soccer coach, and his nickname around the firehouse was "Cappy." Captain Mike Benke was known to his fellow firefighters at Station 16 as a family man and NASCAR fan. He enjoyed laughing but was serious about his job, Captain Gary Taylor said. "You're kind of numb about these kinds of things. You're at a loss for words. It's devastating," Taylor said. Benke, 49, is survived by his wife, Kim, his daughter, Holly Gildea, 30, daughter, Taylor, 14, his son, Hunter, 10, and grandchildren, Kayla Cofield and Chris Cofield, Jr., Captain Taylor said. They live in Springfield subdivision. Benke always took his son fishing, Taylor said. Taylor, who also lives in Springfield, said he saw the Benkes often around the neighborhood. Benke was a soccer coach, and his kids were active in sports. "He's a good fellow. Mike's good people. Good family man," Taylor said. He said Benke, a Charleston native, was a happy person who was always laughing and cutting up. He never saw Benke angry about anything. "He would do anything for anybody," Taylor said. Like many firefighters, Benke, a 29-year-veteran of the department, worked part time. He did inventory for Sears, Taylor said. Engineer Derek Noffsinger recalled Benke as an ambitious, organized person who was a role model for him. Benke had a map book of city streets that included family and career photos. He rode with the book on calls. The inside of his locker was covered with family photos, Noffsinger said. "He was a good guy, a great guy. All of them were," Noffsinger said. Benke had relatives who were Charleston firefighters a generation ago. He was recognized as a person who knew his job, never complained and was soft-spoken. He was a leader who gave off a quiet confidence. Sullivan's Island Town Manager Andy Benke, a first cousin to Benke, recalled him as a dedicated family man. "He was a devoted husband and father and took his responsibility to his family very seriously," Benke said.

Melvin Edward Champaign – Firefighter 16

Firefighter Melvin Champaign was 46 years old. He was an Army veteran, aspiring pastor, and Tae Kwan Do black belt. Melvin Champaign joined the Charleston Fire Department two years ago. Before that, a varied career had taken the 46-year-old to the West Coast and back. He leaves behind a teenage daughter and two younger boys in Washington State. Family from his native James Island spoke of him with glowing admiration. "He was a man in a million," said his older sister, Gardenia Champaign-Moore. "You had to meet him to believe what this man is made out of." Champaign worked out of Station 16 on Ashley Hall Plantation Road, as did five of the other nine firefighters who died. Colleagues recognized his fashion sense when he showed up for the first week of fire class wearing a leather hat with a feather in it. They also noted a penchant for jokingly quoting Bible verse to get through a situation. He wanted to become a pastor. And he once heard saying, "I just want to help people." Relatives Mary and Mikell Fludd raised him on James Island. He went to Fort Johnson High School, where he wrestled and played baseball. Afterward, he joined the Army and resettled in Tacoma, Washington, near Fort Lewis. He served in the infantry but hurt his back several years ago in an accident involving a military truck. He later worked as a welder. As a firefighter, he was among the crews who responded to a fatal December 22, 2005, blaze at the Indigo Creek Apartments that killed two young siblings and uprooted six families. Assistant Engineer Sean Rivers, 30, also remembered lighter times at the fire station, full of card games and pranks. Champaign continuously worked with youth. His nephew, Tony Moore, remembered him almost like an older bother. "No matter what the circumstances were, he always had a smile," he said. "We thank him for making us all feel better."

James "Earl" Allen Drayton – Firefighter 19

Firefighter James "Earl" Allen Drayton**,** 56, was the oldest of the nine firefighters who died at the Sofa Super Store. A 32-year veteran of the Charleston Fire Department, he was known by generations of city firefighters. They called him "old school" around Station 19 in West Ashley. He is survived by his wife Kimberly, five children, three stepchildren, and several grandchildren. Kimberly Drayton said she last saw her husband the day of the fire as he left for work from their Sangaree home near Summerville. The couple had planned to leave for a cruise to Puerto Rico that weekend. "He was all packed," she said. "He was so excited." Drayton exuded a quiet confidence. His rhythmic walk and talk earned him the nickname "Cool Earl," said his older brother, Herbert Drayton. "I never really heard him raise his voice." One of eight children, he was born on Charleston's West Side and his family moved to Amherst Street on the city's East Side when he was a child. After graduating from C.A. Brown High School, he enlisted in the Marine Corps and served eight years on active duty. He had a reputation for dressing to the nines and meticulously washing his black Chrysler. He was selected several times to drive Mayor Joe Riley in the city's Christmas Parade. He was on his third retirement with the department, his wife said. "They kept asking him back. He was going to give it two more years." Drayton also worked as a stagehand. He painted scenes and built sets for countless local performances. He also wore the battle scars of a seasoned firefighter. He was knocked unconscious by an electrical shock while battling a blaze in 1999. His family says he was once trapped in another fire.

Michael Jonathon Alan French – Engineer 5

Assistant Engineer Michael French was 27 years old. He was an Assistant Engineer with 1.5 years service with the Charleston Fire Department. Michael "Frenchie" French was among the youngest firefighters who lost their lives at the Sofa Super Store, but whatever he lacked in experience, he more than made up for in enthusiasm for the job. French, 27, of Eadyville began volunteering with the Pine Ridge Rural Fire Department outside Summerville and developed a reputation as someone who always could be relied upon to show up when the department's alarm tones sounded. He previously worked for the Saint Andrews Fire Department, but he wanted to jump to the city. Charleston firefighter Tim Black got to know French well in January 2006, when the two trained together for a city job. Black said his friend talked a lot about his 5-year-old daughter. As for his other interests, Black said, "He always liked to go out boating and just hanging with the guys." In his short time with the city, French rose to the position of assistant engineer — a relatively quick move. Engineer Derek Noffsinger of Station 16 said French was a quiet sort who only opened up after you got to know him. "He was ready to go places in the fire department," Noffsinger said of French. "He took his job seriously." Black said French was the kind of person willing to fill in on a shift at the last minute. Jonathan Ryan, a Pine Ridge volunteer and Mount Pleasant firefighter, said French had two passions: "He loved the fire department and he loved his daughter," he said, adding that French recently moved in with his cousin to spend more time with her. Black said that upon getting the job with the Charleston Fire Department he and French worked together to help get through the physical agility and stress test — the most challenging part of that training. "He was a real go-getter," Black said. "He wouldn't let you quit. He wouldn't let you slow down. He wouldn't let you give up."

William H. "Billy" Hutchinson, III – Captain 19

Captain Billy Hutchinson was 48 years old. He was a Captain with 30 years service. To friends**,** Fire Captain William "Billy" Hutchinson was a good-natured man and a sports enthusiast who at age 48 still loved to play golf and shoot hoops. But to fellow firefighters, he was the go-to guy for haircuts. At $2 a pop, it was a skill carried over from his second job at Williams Barber Shop in Goose Creek. He was known as an all-around, super-nice guy, and a super firefighter. Hutchinson worked out of fire stations in downtown and West Ashley, most recently at Station 19 on Ashley Hall Plantation Road. "He never had a harsh word to say about anybody, and you couldn't argue with the guy because he'd agree with you. He was a (practical) joker, like most firefighters tend to be," noted a co-worker. "His nickname was 'Lightning,' because he didn't move fast unless there was a fire. We gave him that nickname when he first came on the job here," a friend said. Hutchinson played football and baseball for Middleton High School in the mid-1970s, and basketball for the church league and fire department teams. "We were good," insists Hutchinson's brother, Randy Hutchinson, a former firefighter himself, who played on sports teams with Billy. Randy last saw his brother a few weekends before the fire, when they went jet-skiing. He said Billy was married to Phyllis Hutchinson and had three children, including twin daughters.

Mark Wesley Kelsey – Captain 5

Engineer Mark Kelsey was 40 years old. He was an Engineer with 12.5 years service. Mark Kelsey had a loud voice described as the hardest thing in the Ashley River Fire Department station. He was a gruff retired Navy veteran who told it like it is. He'd come into the station, set his walkie-talkie into the community room charger and ask who hadn't made his pot of coffee. And the coffee better be made with one large scoop, no more. "He was a very aggressive person, kept you straight," said Ashley River Captain Wayne Sammons. It was a gruff front of a kind man who took rookies under his wing and drilled them until they had it down. He left the firefighters at Ashley River with their voices choking as they talked about him. Kelsey, 40, was an engineer and a 12 1/2-year veteran with the city of Charleston Fire Department. He was serving as an acting captain as the trucks drove to the Sofa Super Store blaze just down Savannah Highway from their Station 10. He was a captain working part time with the Ashley River Fire District, joining 15 1/2 years ago when the Charleston Naval Base closed. Born in Indiana, he had come to Charleston with the Navy and never left. He had a teenage son. His passion was his custom motorcycle. He rode the chopper rain or shine. Short and stocky, he kept his blond hair cut short and didn't like to dress up in suit and tie for the station Christmas party. He lived to fight fires. "If there was a fire, he was there. He always wanted to be the first one in," Sammons said. Kelsey refused an office in the Ashley River station, pointed to the housekeeping supply closet where he kept inventory and said that was his office. "He said an office closes him up, and he didn't want to be closed up," Sammons said. Shortly after the fire, an Ashley River firefighter took Kelsey's son to the Savannah Highway station. The son wanted to see where his dad worked. And at the Ashley River station, Fire Marshal Joe Friend stood in the community room staring at the coffee pot. "I was waiting for that 'pot of coffee.' I was waiting for him to come in," Friend said. "I can't tell you how I'm going to miss him."

Louis Mark Mulkey – Captain 15

When Captain Louis Mulkey wasn't on duty at Coming Street Station 15, he often was coaching athletes at Summerville High School. Mulkey, 34, lived and breathed Green Wave sports, and firefighters openly joked that the 1991 Summerville graduate should quit fighting fires and succeed football coach John McKissick. Mulkey was a coach for the school's junior varsity football and basketball teams. McKissick said Mulkey would do anything for students. He always checked athletes' report cards and often accompanied students on recruiting trips. "We lost a good guy, a good friend, a good citizen and a good all-around guy," McKissick said. After the fire, Summerville athletes and fellow firefighters surrounded the home of Mulkey's parents, Ann and Mike Mulkey. Captain Jake Jenkins of Station 15 said Mulkey was known for his competitiveness. He wanted to win, but he always looked out for his team. "He was the bravest of the bravest," Jenkins said. Mulkey's mother phoned her son just before he was called to the Sofa Super Store fire. As news came out about the fire, she saw him on television. "Well, he's fine," she said to herself. And that's what she told people who called asking about her son, until an emergency-services chaplain called her to Station 11 in West Ashley. Mulkey had 11 1/2 years of fire fighting experience and once saved a police officer who had collapsed in the line of duty. Mulkey leaves behind his mother and father; his wife, Lauren, of West Ashley, and a brother, Wayne, of Florida. "We never dreamed he would be a firefighter. One day he just took the job. He loves it," Ann Mulkey said, holding a tissue to her eyes. "That was his love."

Brandon Kenyon Thompson – Firefighter 5

Fire Fighter Brandon Thompson was born in Mobile, Alabama. He was a four year veteran of the Charleston Fire Department, but had about 11 years of fire service experience. How he'll be remembered: Brandon Thompson was always looking for a grant to buy a thermal imaging camera for the Pine Ridge Rural Fire Department in Berkeley County, where he volunteered for 11 years and was a captain. Memorials made to the Pine Ridge department in his name will be used for that purpose. Brandon Thompson**,** 27, had been a volunteer at the Pine Ridge Rural Fire Department since he was a teenager but had recently told the guys they probably wouldn't see him around the station as much because he was preparing for a fall wedding. Thompson and Rachel Sheridan were to be married October 7th on Folly Beach. They'd already sent out "save the date" cards. Thompson's chief at Pine Ridge, Ben Waring, was to be the best man. Thompson had been a Charleston firefighter for four years. He had started his career in the fire service at the age of 14. "He had an older brother that was in it and he just kinda tagged along. That's what he decided to do with his career," Waring said. Thompson was too young to fight fires, but he could go along with the Pine Ridge crews to watch and learn, roll hoses and fetch tools. Thompson worked for the Summerville Fire Department before he joined Charleston. He broke his leg while off-duty last year, and he was given a job working in the mechanic shop and testing hydrants. Thompson, also a captain with Pine Ridge, usually stopped by the Myers Road station in Summerville two or three times a week, Waring said. The two spoke by phone just before the fire, mostly about how Thompson needed some time off for his wedding preparations. Thompson was already on his shift at Station 10 off Savannah Highway, known to firefighters as the Five and Dime because it's the home of Ladder 5 and Engine 10. Full-time Mount Pleasant firefighter and Pine Ridge volunteer Jonathan Ryan said Thompson was an aggressive firefighter who would have seen the Sofa Super Store fire as "just another day on the job. He had the skin of an alligator. He wasn't scared of anything."

Acknowledgements

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Fire Chief Russell B. Thomas, Jr.
Police Chief Gregory G. Mullen

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Charleston Fire Department
Charleston Police Department
Charleston Department of Public Service, Building Inspections Division
Charleston City Employees

James Island Public Service District
Mount Pleasant Fire Department
North Charleston Fire Department
Saint Andrews Fire Department
Saint Johns Fire District

Charleston County Coroner's Office
Charleston County Emergency Medical Services

Bureau of Alcohol, Tobacco, and Firearms
National Institute of Standards and Technology
National Institute for Occupational Safety and Health
South Carolina Law Enforcement Division

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In addition, a number of individuals provided important input into the research and development process for this document. They are too numerous to be listed here. Every single person that we contacted in association with this review went out of their way to show us every courtesy and provide us with the information that we needed.

Executive Summary

On the evening of June 18, 2007, units from the Charleston Fire Department responded to a fire at the Sofa Super Store, a large retail furniture outlet in the West Ashley district of the city. Within less than 40 minutes, the fire claimed the lives of nine firefighters and changed the lives of countless others. The Sofa Super Store fire is a monumental tragedy that will be remembered and discussed for many years.

The City of Charleston Post Fire Incident Analysis and Review Team was appointed by Mayor Joseph P. Riley, Jr. to conduct a detailed analysis of the incident to identify the key factors that directly and indirectly contributed to the loss of nine firefighters. The ultimate goal of this project was to identify the lessons that should be taken from this devastating experience so that every possible effort may be made to prevent future occurrences of a similar nature.

There is no intent in this report to establish blame or assign responsibility for the situation that occurred in Charleston on that fateful evening. The analysis is intended to provide a factual report of what happened, why it happened, and the important lessons that can make a difference in the future. The loss of nine lives speaks for itself as to the importance of learning and applying those lessons in the Charleston Fire Department and every fire department and in the City of Charleston and every community.

This report examines a wide range of issues related to the Sofa Super Store fire. Some of the key issues include:

- The Sofa Super Store was a large property that incorporated a very significant potential for a major fire to occur.

- The fire risk factors associated with the Sofa Super Store exceeded the limits prescribed by the applicable building and fire codes. An automatic sprinkler system should have been installed to reduce the level of fire risk or the buildings should have been divided into manageable fire compartments by a system of fire walls.

    - ♦ If a sprinkler system had been installed, the fire probably would likely have been controlled within the loading dock area.

    - ♦ If effective fire walls had been provided, the fire probably would not have spread beyond the loading dock.

- The fire originated in discarded furniture and materials that had been placed outside the loading dock. The suspected cause of the fire was careless disposal of smoking materials.

- The loading dock had been enclosed by a structure that did not meet building code requirements. The loading dock enclosure failed to stop the exterior fire from spreading to the interior and subsequently contributed to the spread of the fire into the adjoining areas.

- The highly flammable characteristics of the materials that were stored in the loading dock and throughout the premises provided an ample supply of fuel and caused the fire to spread rapidly. The burning contents released copious quantities of heat and toxic smoke.

- Significant quantities of flammable and combustible liquids that were stored in the loading dock likely contributed to the severity and rapid spread of the fire.

- The fire had extended to the loading dock when firefighters arrived. Charleston Fire Department members attempted to fight the fire by initiating an offensive interior attack into the loading dock.

- The offensive attack was launched from two directions. One attack line entered the loading dock from the exterior, while a second line was stretched through the showrooms and into the loading dock.

- The offensive attack failed to control the fire. The fire extended into adjoining areas on three sides of the loading dock.

- At least 16 firefighters, who were operating deep inside the showrooms, became enveloped in heavy smoke.

- An employee who was trapped in a room at the rear of the building called 9-1-1 to request assistance and was rescued by firefighters.

- Conditions inside the showrooms became critical as the fire began to involve this part of the building. Several firefighters became disoriented and were running short of air. Radio messages requesting assistance were not heard.

- Seven firefighters managed to find their way out of the showrooms. The nine deceased firefighters were unable to find their way out as the fire spread rapidly from the rear of the building to the front.

- The size and layout of the building, inadequate exits, and the highly flammable nature of the contents likely contributed to the inability of the lost firefighters to escape from the building.

- Rescue efforts were attempted when the situation inside the showrooms was recognized. In spite of valiant efforts, it was too late to save the missing firefighters before the store became fully involved in flames.

The analysis of operations conducted by the Charleston Fire Department includes the following observations and findings:

- Fire fighting operations at the Sofa Super Store did not comply with Federal occupational safety and health regulations, recommended safety standards, or accepted fire service practices.

- The Charleston Fire Department failed to provide adequate direction, supervision, and coordination over the operations that were conducted.

- The documented duties and responsibilities of an Incident Commander were not performed and risk management guidelines were not adequately applied to the situation.

- The culture of the Charleston Fire Department promoted aggressive offensive tactics that exposed firefighters to excessive and avoidable risks and failed to apply basic firefighter safety practices.

- Insufficient training, inadequate staffing, obsolete equipment and outdated tactics all contributed to an ineffective effort to control the fire with offensive tactics during the early stages of the incident.

- The Charleston Fire Department continued to apply offensive tactics after the situation had evolved to a point where risk management guidelines called for defensive strategy.

- Factors that should have caused firefighters to be removed from interior tactical (offensive) positions were not recognized.

- There was a lack of accountability for the location and function of firefighters who were operating inside the building.

- The Charleston Fire Department did not have appropriate Mayday procedures to be followed by firefighters in distress, for dispatchers, or for command officers on the scene.

All of the listed factors and many others are analyzed and discussed in detail within the body of this report. This document presents the dedicated and conscientious efforts of the review team to honor the nine fallen firefighters by making every possible effort to learn from their sacrifice.

Sofa Super Store
Building Information

Building Description

The Sofa Super Store on West Savannah Highway was the flagship outlet of a chain that operated three retail furniture stores in the metropolitan Charleston area. The business occupied a complex of interconnected structures that had been constructed in several phases. The showroom building, facing Savannah Highway, was actually an assembly of three separate structures. The front wall was a façade, with a parapet extending above the roof line, creating the appearance of one large building when viewed from Savannah Highway. The front wall, including the parapet, was approximately 23 feet tall, while the roof behind the parapet varied from 12 to 14 feet above grade.

The main showroom was originally constructed as a grocery store, probably during the 1950s or 60s. The original building was approximately 125 feet in width and 130 feet deep, with a rectangular extension in the southwest corner (right-rear facing the building from Savannah Highway). The front wall was brick construction with large storefront windows, while the side and rear walls were constructed of concrete block. The original structure had a flat metal deck roof, supported by lightweight steel bar joists (trusses), spanning from east to west across the store. The side walls supported the ends of the bar joists, while two rows of steel beams and columns provided intermediate support. A suspended ceiling was installed below the roof trusses.

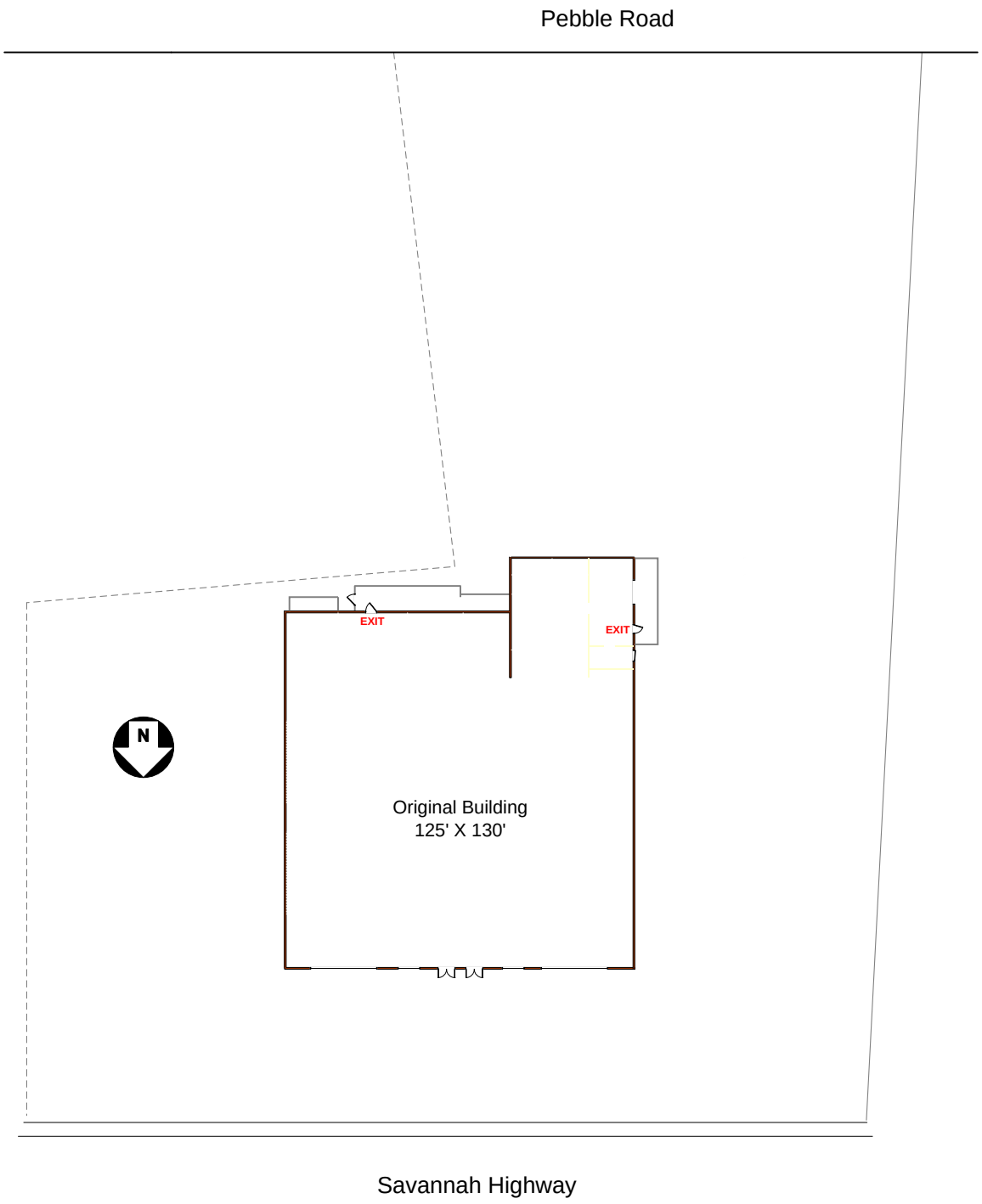

Figure 1: The original grocery store building was constructed in the 1950s or 1960s and annexed into the City of Charleston in 1990.

After the property was converted to a furniture store, two pre-engineered metal buildings were added-on to the original structure to expand the showroom area. Each showroom addition was approximately 60 feet in width and 120 feet deep. The first showroom addition was constructed on the west side of the original

building in 1994 and the second was added on the east side in 1995. (The add-on structures are referred to as the east and west showrooms in this report, while the original structure is identified as the main showroom.) Six large openings in the concrete block side walls, three on each side of the original building, provided connections between the showroom areas; their combined floor area was in excess of 31,000 square feet.

An additional pre-engineered metal structure was erected at the rear of the property in 1996 to serve as a warehouse. This structure was approximately 120 feet wide by 130 feet deep and 29 feet tall. Furniture was stored on steel racks, 20 feet in height, inside the warehouse. An enclosed sheet metal corridor, approximately 20 feet in length, connected the warehouse to the rear of the original building.

Photo 1: Aerial view of the north side of the Sofa Super Store. (Photo courtesy of Pictometry, International)

Building Permits

City of Charleston records indicate that the original structure was the only building on the site when the property was annexed into the city in 1990. Building permits were issued for the construction of the three pre-engineered structures in 1993, 1995 and 1996. The building permit files indicate that the original building and the three additions were considered as four separate structures for building code purposes. The concrete block side walls of the original structure were designated as fire walls and roll-down fire doors were installed in the six large (8' X 8') openings that connected the showrooms. A seventh roll-down fire door was installed at the point where the corridor leading to the warehouse was connected to the rear wall of the original building. All of the fire doors had fusible link release mechanisms.

The division of the property into four separate structures allowed the additions to be constructed without automatic sprinklers. The floor area of each individual building was below the threshold that would have required automatic sprinklers to be installed.

Two building code variances were obtained when the warehouse was constructed. The variances allowed the property owner to omit fire resistance requirements for the north and west walls of the warehouse. The variances were based on physical separation distances from adjacent structures and distances from property lines, as well as an interpretation of the "fire district" definition in the Building Code.

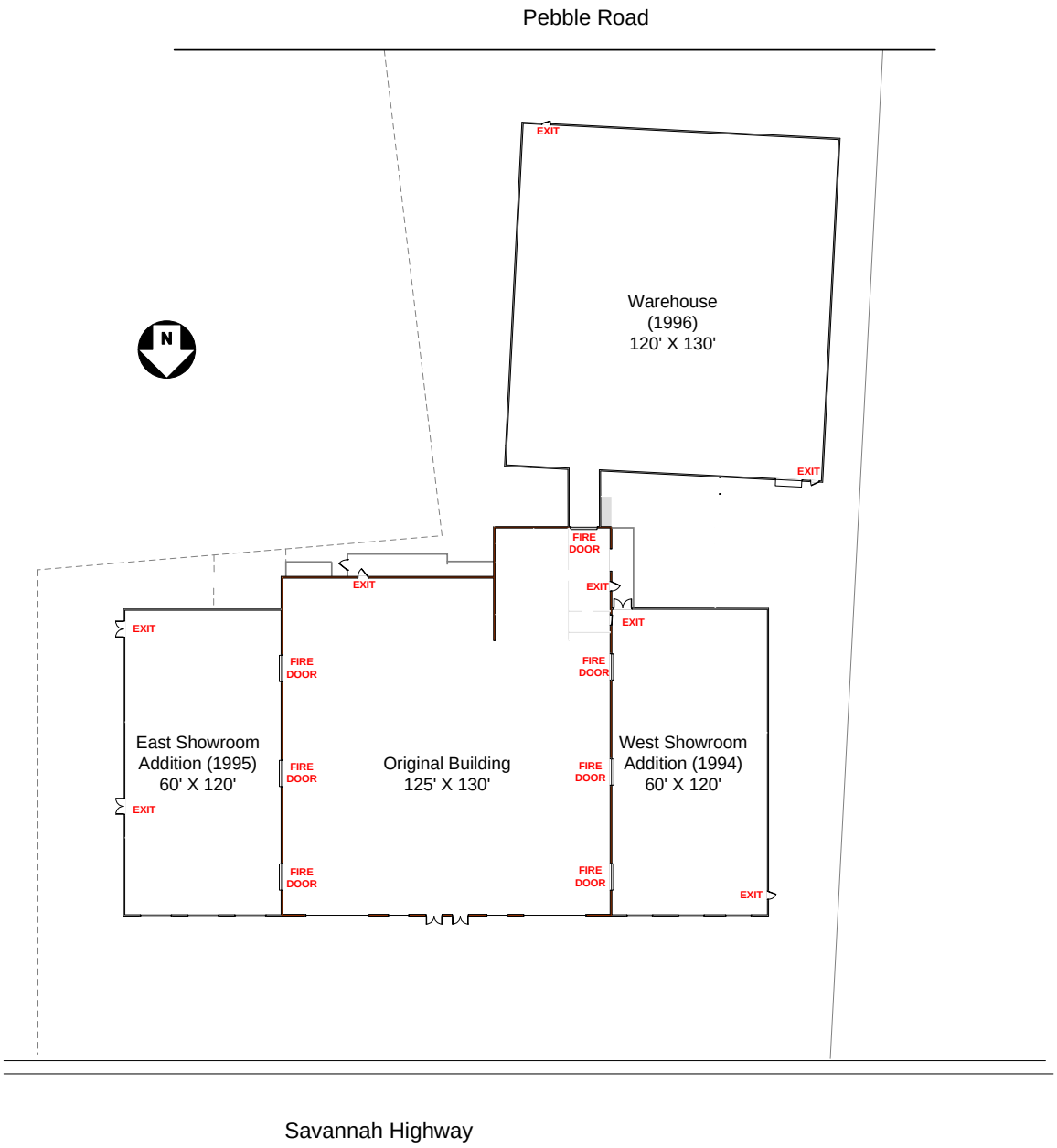

Figure 2: Site plan indicating 4 permitted structures as of 1996. Roll-down fire doors and exits are indicated.

Fill-in Additions

The spaces between the warehouse and the showroom buildings were filled-in gradually by the addition of four smaller structures between 1996 and 2005. The sequence of construction was interpreted from a series of aerial photographs that were taken during that period. The City of Charleston files do not contain any records of building permits or permit applications for the four additional structures. Interior alterations were also conducted at the rear of the original building, presumably without permits, to construct office spaces.

The non-permitted structures included a wooden loading dock that was constructed in the space between the warehouse and the western addition to the showroom. The loading dock was subsequently enclosed by erecting a wood frame structure that was covered with sheet metal. The loading dock enclosure was constructed in two stages - the roof of the older section, adjacent to the warehouse, was 9 feet above the deck, while the newer section, adjacent to the west showroom, was 12 feet tall. Two large sliding doors were provided in the west wall of the loading dock facing the open yard. A wooden ramp allowed furniture to be rolled-up to one of the doors, while the other door was at truck bed height.

When completed, the enclosed loading dock covered approximately 2,200 square feet and occupied most of the former open space that was bordered by the warehouse, the connecting corridor, the southwest quadrant of the original building and the south wall of the west showroom addition.

The covered loading dock was used as a temporary storage area for furniture. This area was sometimes referred-to as the staging area, because it was used to assemble furniture orders that were scheduled for delivery on the following day. Part of the loading dock was also used for long-term storage, including an enclosed area at the southeast corner, adjacent to the warehouse and the connecting corridor.

Two workshop rooms that were used for furniture repairs and refinishing were added on the east of the connecting corridor, between the warehouse and the rear of the original structure. The only access to the two workshop rooms was through the warehouse. These additions were also wood frame structures enclosed by sheet metal.

A small courtyard, approximately 15 feet wide and 5 feet deep, was located between the east wall of the loading dock and the west wall of the passageway leading to the warehouse. Several air conditioning units were located in this space that was accessed by a doorway at the east end of the loading dock.

Figure 3: The space between the warehouse and the showrooms was filled-in with the construction of the loading docks and workshops. Interior partitions were constructed to create offices and other spaces at the rear of the main showroom.

Lack of Effective Fire Separations

The four additions that were constructed in the spaces between the showrooms and the warehouse interconnected three of the four larger structures and compromised the required fire separations between them. Their construction invalidated the building code provisions that allowed the four permitted structures to be constructed without automatic sprinkler systems.

The loading dock was directly connected to the west showroom, the warehouse, and the connecting corridor. The walls between these spaces were sheet metal assemblies that provided no fire resistance. A pair of swinging metal doors provided a direct connection from the west showroom into the loading dock.

The concrete block wall that separated the loading dock from the rear portion of the original building was compromised by a large open doorway. This opening, which appears to have been a loading dock for the grocery store, was equipped with an electrically operated garage door (non-fire rated). This door was open when the fire occurred. A smaller personnel door also passed through this wall and two window openings had been covered-over in the process of additions and renovations.

Photo 2: Post-fire view of the loading dock. Note the double doors (A) connecting the loading dock to the west showroom at the upper left and the open garage door (B) in the concrete block wall between loading dock and the holding room. (Photo courtesy Bill Murton, Charleston Police Department)

If building permits had been obtained for the construction of the loading dock and the workshops, the previous classification of the property as four separate buildings would have been invalidated. All of the property encompassing the original structure, the west showroom addition, the warehouse, the connecting corridor, the loading dock and the workshops would have been reclassified as a single structure, because the fire resistive separations and open spaces had been compromised. The building code would have required the installation of an automatic sprinkler system to protect this entire area.

The alternative to installing sprinklers would have been to construct a system of rated fire walls to maintain the required separations, so that none of the individual spaces would have exceeded the maximum floor area permitted without sprinklers.

Also, wood frame construction would not have been approved as an addition to the existing non-combustible construction buildings. The additions would have been required to meet the same construction standards as the permitted buildings.

On June 18, 2007, there were no effective fire walls or physical separations to stop a fire that originated in the loading dock area from spreading into the three adjoining areas. The fire could spread directly into the rear of the original building through an open doorway. The fire could also spread to the warehouse and to the west showroom through sheet metal walls that offered no fire resistance.

Exits

The original grocery store appeared to have been constructed with a main entrance and exit at the front of the building and two additional exits at the rear. The building permit files indicate that two additional exits were provided from each of the three permitted additions to the Sofa Super Store. Examination of the premises after the fire determined that three of the required exits had been compromised by the non-permitted additions and modifications and that all of the exits, with the exception of the main entrance/exit doors, were obstructed and/or locked at the time the fire occurred.

The two sets of double doors that were located at the center of the building, facing the parking lot and Savannah Highway, served as the main entrance and exit from the showrooms. There were no exits at the rear of the main showroom building. The rear (south) wall of the original building gave the appearance that several openings had been filled-in during the process of constructing offices and reconfiguring the ancillary spaces outside the main structure. At least one filled-in doorway at the rear of this building appeared to have been an exit at some time in the past.

Another door that appeared to have been an exit from the grocery store was blocked by a vending machine. This door connected the holding room to the loading dock. The loading dock also obstructed the egress path from this exit.

There were no entrances to the east and west showrooms from the exterior of the building. Both showroom additions were accessed from the main showroom via the six large openings in the side walls. The exits that were provided when the showroom additions were constructed included two sets of double doors in the east wall of the east showroom; a single exit door in the west wall of the west showroom; and a set of double doors in the south wall (rear) of the west showroom.

The addition of the loading dock obstructed the double doorway exit at the rear of the west showroom. These doors were marked as an exit; however the egress path through the loading dock did not meet the code requirements for an exit. The addition of the loading dock blocked the egress path from the double doors. Another exit should have been added to the rear of the west showroom to compensate for the loss of the double doors as an exit.

There were no approved exits from the loading dock. The two large sliding doors in the west wall of the loading dock did not meet the code requirements to be classified as exits.

Exit doors were provided at the north and south ends of the warehouse. The only exits from the workshop rooms were the openings into the warehouse. Occupants of these rooms would have had to travel through the warehouse to reach the north or south exits.

Photographs that were taken after the fire indicate that all of the exit doors from the showroom buildings and the warehouse were secured by padlocks and hasps or by slider mechanisms[1]. One of the exits from the warehouse was also physically obstructed by a large shipping container. The main entrance and exit doors at the front of the showroom building were unlocked.

[1] South Carolina OSHA issued citations to the business in reference to the locked exits.

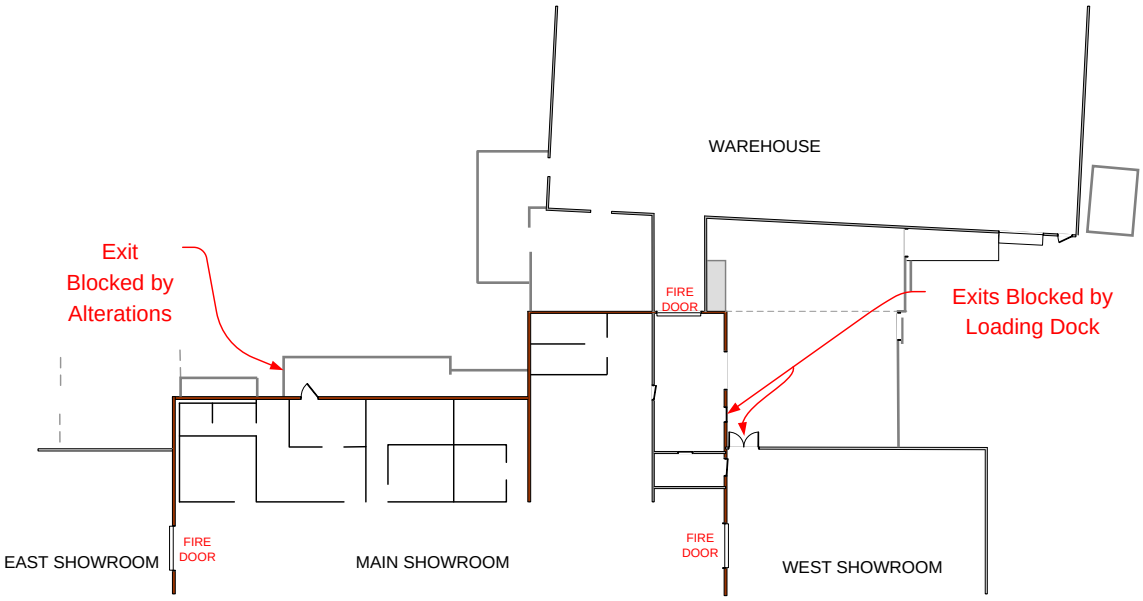

Figure 4: Construction of the loading dock obstructed the egress path from two showroom exits. The construction of offices and modifications to ancillary spaces at the rear of the main showroom obstructed an additional exit.

Building Contents

The fire load in most areas of the Sofa Super Store was very high, due to the nature of the business and the contents that were on display and in storage. The contents were predominantly home furniture and furnishings, which typically incorporate large quantities of foam plastics and other synthetic materials. These materials burn quickly, produce large quantities of smoke and have high thermal energy release rates. Many of the products on display were easily ignited and supported rapid fire spread.

The showrooms were crowded, with narrow aisles among the displays of furniture and household accessories. Firefighters reported that it was very difficult to advance hose lines through the store and even more difficult to navigate when the showrooms filled with smoke. Several firefighters reported that they were falling over furniture and becoming entangled as they tried to find their way back to the main entrance

The showroom areas of the Sofa Super Store property were classified as a mercantile occupancy, while the warehouse was classified as a storage occupancy. These occupancy classifications were appropriate for the sale and distribution of furniture. The occupancy classifications did not permit the storage of flammable liquids or hazardous materials, spray finishing operations, or other hazardous activities. A large quantity of aerosol containers of spray paints and finishes were found in the workshop area after the fire. The presence of these

containers suggests that spray finishing operations were conducted in the workshops.

In addition to the containers that were found in the workshops, remnants of numerous one gallon metal containers were found in the debris. These containers are believed to have contained a variety of flammable and combustible liquids, including naphtha and lacquer thinner. At least 28 such containers were found in the rubble near the southeast corner of the loading dock. Additional flammable liquids containers were found in the warehouse and in a storage room behind the office area. The presence of these products greatly increased the level of fire risk within the Sofa Super Store property.

No permits had been issued by the City of Charleston for spray finishing or for the storage or use of flammable liquids, combustible liquids, or hazardous materials[2]. These activities would likely not have been permitted in a building that did not comply with the building and fire codes.

Inspection History

The Sofa Super Store had not been inspected by the City of Charleston for code enforcement purposes since 1998. A fire inspection that was conducted in 1998 identified several fire code violations which the owner was notified to correct[3]. The violations that were noted included obstructed paths to exits and exit signs in need of repair.

The inspection report did not identify any non-permitted additions to the buildings and did not refer to spray finishing operations or improper use and/or storage of flammable liquids. It could not be determined if the additions had been constructed or if the non-permitted activities were occurring at the time of the inspection.

The annual fire inspection program for commercial occupancies was discontinued after the 1998 inspection was conducted. The City of Charleston Code was amended in 2001[4] to remove a mandatory requirement for annual fire inspections in mercantile occupancies.

The Fire Department had conducted pre-fire planning and familiarization visits during the intervening years. These visits did not involve code enforcement activities.

[2] The Fire Code would permit the storage of small quantities of these materials for incidental use without permits. The quantities of aerosols and flammable liquids that were determined to be present exceeded the allowances for incidental storage and use of these products.
[3] The 1998 inspection was conducted by a fire inspector under the authority of the City of Charleston Fire Official. The Fire Official is assigned to the City of Charleston Building Department. A copy of the inspection report is provided in Appendix G of this report.
[4] Regular occupancy inspections appear to have been discontinued in 1999; the related code amendment was adopted in 2001.

Summary of Fire Code and Building Code Compliance Issues

The fire at the Sofa Super Store could have been prevented, and should have been quickly controlled, if the property had been constructed and maintained in compliance with the building and fire codes:

- The fire could have been prevented if the discarded combustible materials had not been improperly stored in close proximity to the building and/or if the employees had not been permitted to smoke in proximity to this fuel supply.

- The loading dock enclosure was constructed without permits and did not meet building code requirements. If the loading dock had not been enclosed by exterior walls and a roof, the fire probably could have been controlled before the flames spread beyond the area of origin. The loading dock enclosure caused the fire to spread to all of the contents within the loading dock and then to adjacent areas.

- If building permits had been obtained for the construction of the loading dock and workshop additions, the owner would have been required to install an automatic sprinkler system or additional fire walls.

    - If an automatic sprinkler system had been installed and properly maintained, the fire would have been quickly controlled and would have caused relatively minor damage.

    - If a system of fire walls had been constructed and properly maintained (as an alternative to a sprinkler system), the fire would not have spread beyond the loading dock.

- The presence of improperly stored flammable and combustible liquids within the loading dock, in quantities greater than the Fire Code would permit for incidental use, probably accelerated the fire and enabled it to spread more quickly to the adjoining areas.

- The inadequate number of exits, locked exits, and obstructed paths to exits significantly reduced the potential for firefighters who were inside the showroom buildings to find a path to safety.

Significant Building Construction Details

In addition to the previously noted code compliance issues, several factors contributed to the severity and rapid spread of the fire that occurred in the Sofa Super Store. While these factors were not in violation of any codes or regulations, they played a significant role in relation to the manner in which fire spread from the loading dock to the showrooms and claimed the lives of nine firefighters.

Void Spaces above Ceilings

The primary path of fire extension from the loading dock into the main and west showrooms was probably via the void spaces above the ceilings. Suspended ceilings were installed above the retail spaces in all three showroom areas, creating three large interstitial void spaces. The concrete block walls of the original building divided these void spaces into three separate sections. Each void space was equal in area to the occupied area below the ceiling.

The smoke and hot fire gases that were produced by the fire in the loading dock entered and accumulated within the void spaces. The hot fire gases produced a rich mixture of pre-heated fuel within the void spaces that could easily ignite if a supply of fresh air was introduced.

The ceiling above the main showroom was approximately 9 feet above the floor level. The void space above the ceiling in this area was approximately 5 feet in height and enclosed the lightweight steel bar joists that supported the metal roof deck.

The ceilings in the east and west showroom areas were approximately 8’-6” above the floor. The roof lines above both of these areas sloped toward the outer edges, creating void spaces above the ceilings that varied from approximately 2’-6” in height at the outer walls to 5 feet at the concrete block walls of the original building.

When the void spaces were filled, the smoke would have continued to bank down into the showrooms where the firefighters were working. The smoke would have quickly obscured their visibility and the temperature would have gradually increased as the hot gases stratified at the ceiling level and descended toward the floor. This would produce the same type of fuel-rich atmosphere within the showrooms as above the ceilings, setting the stage for the contents of the store to become involved in a rapidly spreading fire.

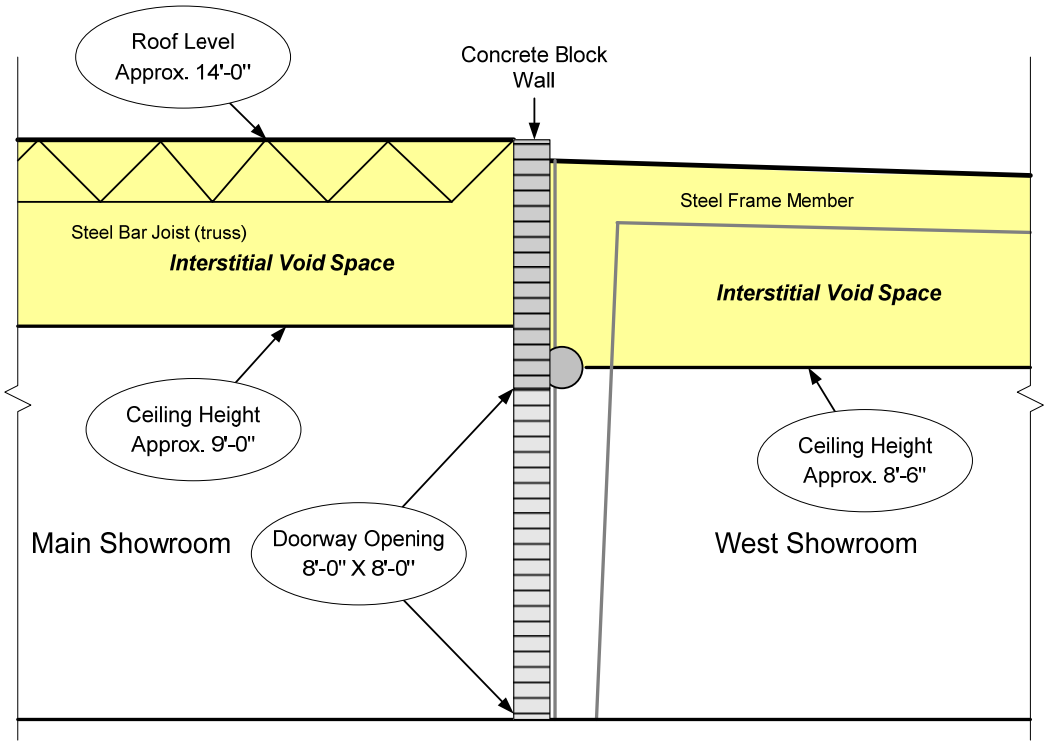

Figure 5: Cross section through the concrete block wall, separating the middle showroom from the west showroom. The interstitial void spaces above the ceilings in both areas are indicated.

Holding Room

The area in the southwest corner of the main showroom structure was known as the “holding room”. This room, used for temporary storage, was enclosed by the concrete block walls of the original building on two sides and by interior partitions on two sides. Combustible materials, including futon cushions, were stored in the holding room.

Two large openings in the concrete block walls provided direct connections from the holding room to the loading dock and to the corridor leading to the warehouse. The opening leading to the corridor was protected by an eight and one half foot wide roll-down fire door with a fusible link release mechanism. An eight-foot wide non-fire rated garage door was installed in the opening between the holding room and the loading dock. This door was operated by an electric motor and was open at the time the fire occurred. The open doorway provided a direct path for the fire in the loading dock to extend into the holding room.

The large opening between the holding room and the loading dock could not be seen from the showroom. A standard (3'0" X 7'0") personnel door, which was normally closed, provided access from the rear portion of the middle showroom into the holding room. Fire extension from the loading dock into the holding room could not be observed as long as this door was closed and the interior partition walls retained their integrity.

There was no ceiling above the holding room – the steel bar joists that supported the roof were exposed. The heat, smoke and fire gases that were produced by the fire in the loading dock flowed into the holding room and had direct access to the interstitial void space above the main showroom.

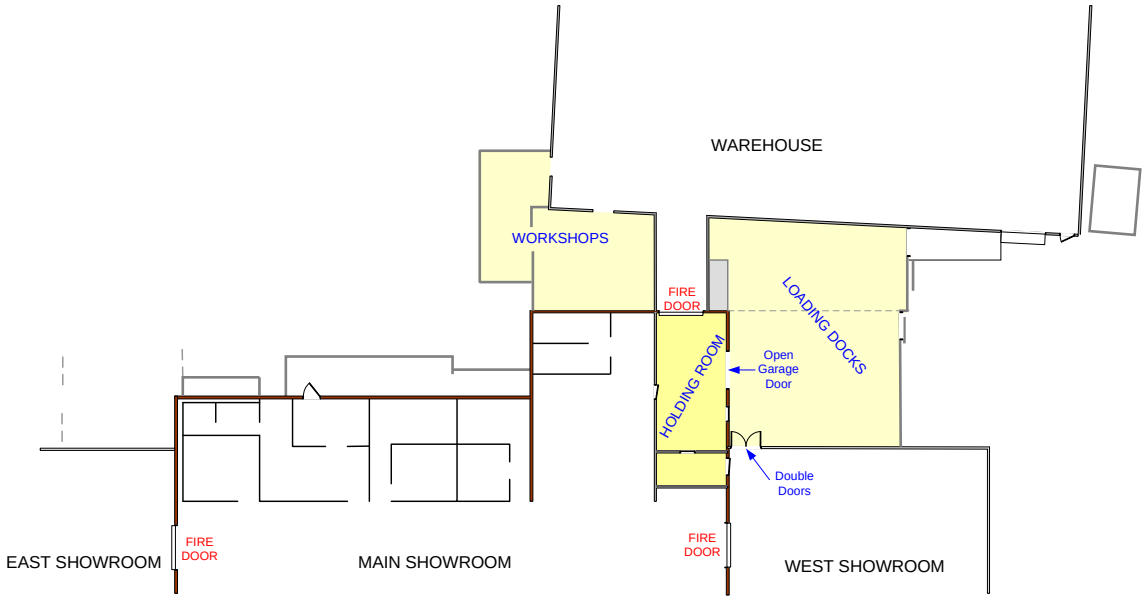

Figure 6: The holding room was located within the walls of the original building. An open garage door provided a direct path for the fire to spread from the loading dock into the holding room.

Façade and Parapet

The façade that was constructed across the front of the Sofa Super Store gave it the appearance of one large structure when viewed from the street. The parapet above the front wall made the showroom buildings appear to be approximately 23 feet tall, while the roofs behind the parapet were 12 to 14 feet in height. This feature prevented ladder access to the roof from the front of the building. The parapet also created a visual obstruction; the roof lines could not be observed from the ground in front of the building.

There were no physical or visual obstructions on the sides or at the rear of the showroom building. The roof lines could be viewed from the sides and the rear and the different construction types and ages of the structures were evident from these vantage points. The roofs were easily accessible from ground ladders.

Roof Coverings

The roof coverings over all the different sections of the Sofa Super Store incorporated corrugated metal decking or sheet metal roof panels. A metal roof deck tends to retain heat and fire gases within the building until the structure collapses, unless vertical ventilation openings[5] are available to release them. In the absence of vertical ventilation, the hot gases will tend to mushroom (spread horizontally) over a large area.

A series of aerial photographs that were taken over several years indicate that the flat roof above the grocery store was originally constructed with a built-up covering of tar and gravel on top of the steel deck. The photographs indicate that a layer of sprayed-on foam insulation was applied to this roof between 1998 and 2001. The additional insulation would have increased the tendency to retain heat and fire gases within the building.

It could not be determined if the built-up tar and gravel layers were removed before the sprayed-on coating was applied or if the new material was applied on top of the old roofing. Most of the roof coating and membrane materials, including the foam insulation, were consumed by the fire, leaving only the corrugated metal decking. Analysis of the debris indicated that the roofing incorporated a 4-inch thick layer of polyurethane foam, a roof membrane, protective coatings and ballast (small rocks).

If the tar and gravel layers remained in place, or a substantial residue of tar, the additional risk of a combustible roof deck fire would have been present. This type of fire can occur when the heat of a fire under a metal deck roof causes tar above the deck to melt. The melted tar can drip into the void space through the joints in the metal decking: the flammable vapors released by the tar are then ignited in the void space.

The roofs above the west and east showroom additions were corrugated sheet metal, attached directly to the metal stringers or metal supports with screws. Approximately 3 inches of fiberglass insulation was installed underneath the metal roof, within the interstitial void spaces.

[5] Firefighters routinely use power saws to cut vertical ventilation openings in roofs.

Limited Access and Ventilation Openings

There were very few openings in the exterior walls of the Sofa Super Store, other than the large windows across the front of the showrooms. The limited openings restricted the number of points where firefighters could enter the buildings to attack a fire and also limited the potential for horizontal ventilation. The metal roof deck over the main showroom and the sheet metal roof coverings over the newer areas presented significant barriers to vertical ventilation. The firefighters had very few options to release the smoke and heat that entered the showroom areas.

Power saws with metal cutting blades would have been required to provide vertical ventilation openings to release the smoke and heat. A limited number of translucent plastic panels were installed in the roof above the loading dock and the warehouse. These panels tend to melt or burn away when exposed to a fire; however they did not provide sufficient openings to create effective vertical ventilation.

The limited number of openings in the exterior walls was also a very significant factor in relation to exit paths that were available to the firefighters who were operating inside the showrooms. There were very few exits and all of the exit doors, other than the main entrance, were either locked or secured by mechanical devices.

Site Arrangement

Access for fire apparatus to the Sofa Super Store was limited to the front parking lot, facing Savannah Highway, and the driveways along the east and west sides of the showroom buildings. The driveway on the east side was obstructed by parked delivery trucks at the time of the fire. A gate was installed across the west driveway, which provided access to the loading dock and a delivery door at the northwest corner of the warehouse. The gate was unlocked and opened by a store employee before the first fire apparatus arrived.

A narrow footpath provided the only access to the rear of the east and main showroom buildings. This area was obstructed by fences and several trees. A small building on an adjacent property created an exposure directly behind the original grocery store building.

The warehouse extended back to Pebble Road on the south side of the property. The south wall of the warehouse was accessible from the street, while fences obstructed access to the east and west sides. The property on the east side of the warehouse was residential and provided very limited access for fire apparatus. Most of the property on the west side was vacant except for a small building adjacent to the front section of the warehouse.

Public Water Supply and Hydrants

The closest hydrants to the Sofa Super Store property were in the residential area on Pebble Road; however, there was no access from this side of the property to the showroom buildings or the loading dock area. There were no hydrants in the section of Savannah Highway directly in front of the showroom buildings. Hydrants were located to the east and west on Savannah Highway and on side streets north of Savannah Highway.

The closest hydrant to the front entrance was approximately 500 feet northwest at the intersection of Blitchridge Road and First Drive. The closest hydrant to the east was on the north side of Savannah Highway, approximately 1500 feet from of the main entrance. A hydrant that was previously located on the east side of Wappoo Road, north of Savannah Highway, had been removed before the fire occurred[6].

The east-west water main in Savannah Highway was 8 inches in diameter. The east-west main diverted one block north to First Street, between Blitchridge Road and Wappoo Road. The water mains in Wappoo Road were 8 inches to the south of Savannah Highway and 10 inches to the north.

Flow test records indicated that most of the hydrants in the area could deliver 1200 to 1400 gallons per minute at 20 psi residual pressure when tested individually. There were no test records to indicate the total flow that would have been available from a combination of hydrants flowing simultaneously.

[6] The hydrant had been removed because it was in a location where it was frequently struck and damaged by trucks entering the adjacent property.

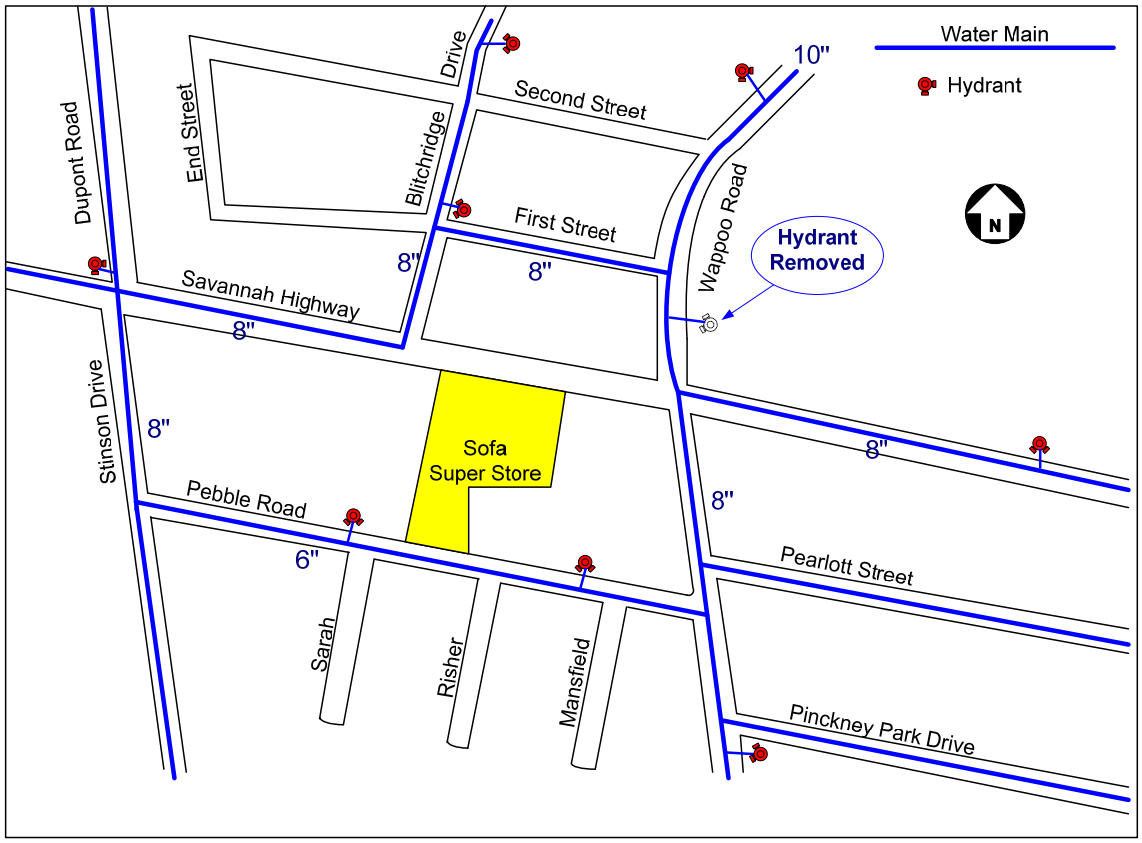

Figure 7: Fire hydrants and water mains in proximity to the fire scene.

Charleston Fire Department

The Charleston Fire Department

The City of Charleston occupies an area of almost 110 square miles with a total estimated population of 121,247. The city includes the original peninsula area, bounded by the Ashley and Cooper Rivers, as well as parts of Johns Island, West Ashley, James Island, and Daniel Island.

In 2007, the Charleston Fire Department included 19 fire companies, operating out of 14 fire stations. The Department employed 246 sworn members and 14 civilians with an operating budget of 14.9 million dollars.

The fire suppression crews worked on a 24 hours-on/48 hours-off work schedule, staffing 16 engine companies and three ladder companies. A minimum of four members were assigned to each company on each shift, although most companies operated with 3 crew members on duty most of the time. If staffing was short on a particular shift, ladder companies could be operated with a minimum of two on-duty members. On occasion, a ladder company would be removed from service due to staffing shortages.

An Assistant Fire Chief was assigned to command each shift. The Assistant Chief responded to alarms in a first-due district in the peninsula area of the city and to working incidents city-wide. The city was divided into four battalions with a Battalion Chief on duty in each district at all times.

The standard response to a reported structure fire was two engine companies, one ladder company, and a battalion chief. A third engine company would automatically respond to the scene of any working fire and a third engine company was also dispatched to alarms for high rise buildings. Depending upon the area of the city where an incident occurred, the initial dispatch to a structure fire or a report of a working fire would initiate the relocation of additional companies to cover the area vacated by the responding units.

At the time of the Sofa Super Store fire, the Charleston Fire Department did not use greater alarms to bring additional resources to the scene of an incident. The chief officer in command of the incident would specifically request additional companies through the dispatcher.

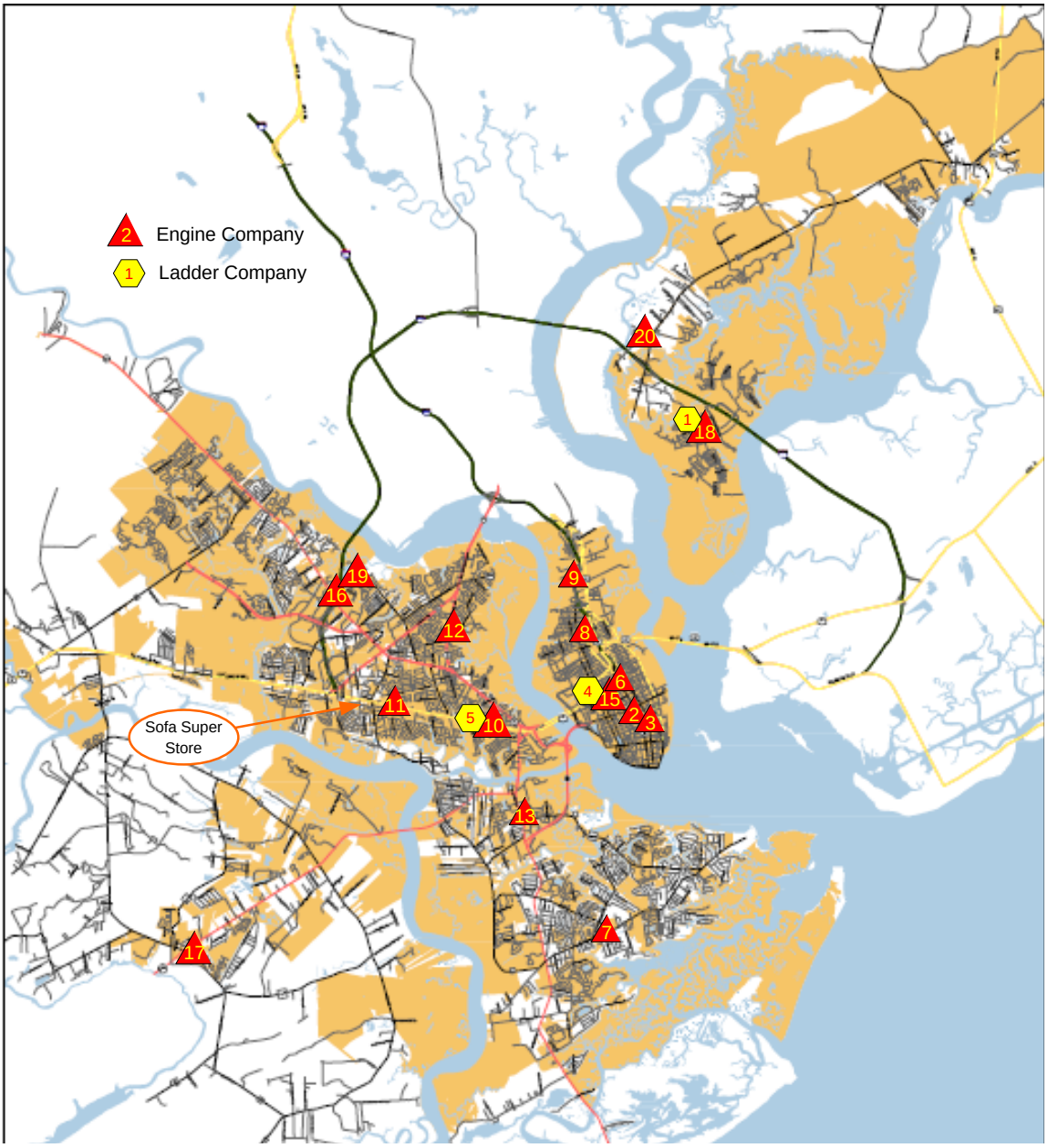

Figure 8 – Charleston Fire Department fire stations and company locations. At the time of the fire, Engines 16 and 19 were housed at Fire Station 16.

Figure 9 – Fire stations and company locations in the West Ashley and Peninsula areas, including Saint Andrews Fire Stations 1 and 2.

Mutual Aid

At the time of the Sofa Super Store fire, the Charleston Fire Department did not routinely utilize mutual aid resources for response to emergencies. The Charleston Fire Department would occasionally request mutual aid units from surrounding agencies, particularly during periods of exceptional activity or when a mutual aid unit was closer to an emergency incident than any available Charleston company. Similarly, Charleston Fire Department units were occasionally, but not systematically, requested to provide mutual aid to the surrounding cities and districts. The Charleston units were generally called to assist the local jurisdiction at a major incident or to respond to calls when the local companies were unavailable.

In areas such as West Ashley, where Charleston and Saint Andrews fire stations are located close to one another and the jurisdictional boundaries are particularly complicated, there was limited coordination between the two departments. In many cases, both departments would be called to respond to the same incident, or one department might arrive and determine that the incident was actually in the other's jurisdiction. In other cases, units from one fire department would literally drive past the other department's fire station during a response.

The Sofa Super Store was located within the Charleston city limits; however most of the adjacent properties were within the Saint Andrews response district. Several of the Saint Andrews units that responded to the Sofa Super Store fire were deployed to protect exposures that were within their own jurisdiction, while other Saint Andrews companies were involved in operations on the main fire building.

The Charleston and Saint Andrews firefighters generally worked cooperatively when they responded together; however their apparatus, equipment, staffing and standard operating procedures were not compatible. In most cases the companies from each agency would operate under their own command structures with “loose coordination” between the two departments. The operational effectiveness of mutual aid operations tended to depend on the particular individuals who were on duty and responded to the scene.

Most of the fire departments that serve areas adjacent to the City of Charleston, including Saint Andrews, operate their own individual dispatch centers. Their radios are on a separate 800 MHz trunking system, however the technology is compatible with the City of Charleston system and most agencies have the frequencies and talk groups of the neighboring departments programmed into their portable and mobile radios. The Saint Andrews dispatchers routinely monitor the Charleston radio system due to the proximity of their districts.

Following the Sofa Super Store fire, the Charleston Fire Department and the other fire departments in the area have participated in several initiatives to develop a more effective mutual aid system. Several of the surrounding fire departments are planning to consolidate their communications centers along with Charleston County EMS.

Units by order of arrival:

Battalion 4	(Dispatched: 19:09 - On Scene: 19:10)
Car 2	(Dispatched: 19:10 - On Scene: 19:11)
Engine 10	(Dispatched: 19:09 - On Scene: 19:11)
Engine 11	(Dispatched: 19:09 - On Scene: 19:11)
Ladder 5	(Dispatched: 19:09 - On Scene: 19:12)
Engine 16	(Dispatched: 19:10 - On Scene: 19:15)
Car 1	(On Scene: 19: 16)
Engine 12	(Dispatched: 19:12 - On Scene: 19:17)
Engine 15	(Dispatched: 19:13 – On Scene 19:17)
Engine 19	(Dispatched: 19:15 - On Scene 19:20)
Engine 6	(Dispatched: 19:16 – On Scene 19:21)
Battalion 5	(On scene: 19:24)
Saint Andrews Car 3	(On scene: 19:24)
Saint Andrews Engine 2	(On scene: 19:25)
Saint Andrews Rescue 1	(On scene: 19:25)
Engine 3	(Dispatched: 19:31 – On Scene 19:40)

A listing of firefighters assigned to each apparatus and fire department vehicle is included as Appendix A.

Incident Chronology

Fire Discovery

The fire at the Sofa Super Store originated at approximately 19:00 hours (7:00 p.m.) on Monday, June 18, 2007. The store was open for business at the time, although no customers were present. There were five employees working in the showroom area and one in the workshop at the rear when the fire was discovered.

The weather recorded at the Charleston International Airport at 19:00 on June 18, 2007 was clear, 79 ^{o}F (26 ^{o}C), with 82 % relative humidity. The winds were 9 to 11 mph from 190 to 200 degrees (south-southwest), and the barometric pressure was 30.0 – 30.05 in. hg.

The fire was first reported by a passer-by who observed smoke and flames at the rear of the Sofa Super Store, near the loading dock. The passer-by called 9-1-1 on his cell phone to summon the fire department and went into the store to alert the employees that their building was on fire.

After being alerted by the passer-by, a store employee obtained a fire extinguisher, walked back through the showroom to the holding room and entered the loading dock through the open garage door. Inside the loading dock enclosure he encountered moderate smoke and observed flames entering from the exterior around the frame of the door at the top of the ramp. He discharged the dry chemical extinguisher, attempting to keep the flames from spreading to the interior of the loading dock. After expending the contents of one extinguisher, he returned to the showroom to obtain a second extinguisher.

When the employee returned with the second extinguisher, he was unable to re-enter the loading dock due to the heavy smoke condition that had developed in the loading dock and the holding room. He estimated that smoke had completely filled this area in less than one minute. He discharged the second extinguisher from the holding room into the loading dock through the garage door opening.

While he was operating the second fire extinguisher, the employee heard one of the fire doors rolling down into position. The employee could not see which door had closed through the heavy smoke; however, the only fire door that he could have heard operating in this area was located at the end of the corridor leading to the warehouse. The fusible link release mechanism for this door was inside the holding room. This suggests that the fire had extended into the loading dock and sufficient heat had passed through the opening, from the loading dock into the holding room, to cause the fusible link to release the automatic closing mechanism. The fire door probably closed at approximately the same time the first firefighters were arriving at the Sofa Super Store.

Initial Response

The first call reporting the fire was made to Charleston 9-1-1 and transferred to a fire dispatcher at 19:07:58[7]. The caller reported a "huge fire at the back…" of the Sofa Super Store. At 19:09:02 hours, Engines 11 and 10, Ladder 5, and Battalion Chief 4 were dispatched for a possible structure fire behind the Sofa Super Store at 1807 Savannah Highway.

When the alarm was transmitted, Battalion Chief 4 responded immediately from Fire Station 11, which is located one mile east of the fire scene on Savannah Highway. Battalion Chief 4 observed a column of smoke and reported "heavy smoke coming from that direction" as he pulled out of the fire station and turned toward the fire. When this message was transmitted, Engine 16 self-dispatched as the third-due engine company, according to the Charleston Fire Department response policy, and Engine 15 began to relocate from downtown to cover the West Ashley district. The on-duty Assistant Chief (Car 2) was at Fire Station 11 for dinner and responded when he heard the "smoke showing" report.

Battalion Chief 4 was the first unit on the scene at 19:10:46 hours, less than 2 minutes after the initial dispatch. He pulled into the driveway on the west side of the fire building where he observed a fire immediately in front of the loading dock, with flames reaching above the roofline. The initial report from Battalion 4 indicated trash and debris burning outside the building; a few seconds later he added that the fire might have extended into the building. Battalion Chief 4 then backed his car out of the driveway to make room for an engine company to come in and attack the fire.

Engine 11 was slightly delayed leaving quarters because the apparatus was being washed on the rear ramp and some equipment had to be placed back into compartments. The column of smoke was visible as Engine 11 responded westbound on Savannah Highway and heard Battalion Chief 4 report a trash and debris fire at the rear of the building. Engine 11 turned south on Wappoo Road and then west on Pebble Road to approach the warehouse from the rear.

Upon reaching the south side of the warehouse, Captain 11 realized that the fire was between the warehouse and the main building and could not be accessed from Pebble Road. Engine 11 continued on to Stinson Drive and returned to Savannah Highway, approaching the fire scene from the west.

[7] The all of the times cited in this report have been adjusted to correspond with a common time base as described in the introduction.

The Assistant Chief continued west on Savannah Highway to the front parking lot of the Sofa Super Store, where he met Battalion Chief 4 near the northwest corner of the building. The two chief officers had a brief exchange at that location; the Assistant Chief indicated that he would go inside the store to check for fire extension into the building, while Battalion Chief 4 should go to the west side of the building and direct operations in that area.

PHASE ONE OPERATIONS - 19:11 TO 19:18

Offensive Strategy

Engine 10 was the first fire company to arrive at the front of the building[8]. At 19:11:45, the Assistant Chief directed Engine 10 to back down the driveway on the west side of the Sofa Super Store. Battalion Chief 4 walked back along the west side of the building. As soon as he reached the loading dock area, he advised the Assistant Chief that the fire had extended into the building. Flames were visible inside the loading dock through a large ventilation fan opening in the west wall.

At 19:12:04, the Assistant Chief contacted Engine 16 with instructions to come inside with him when they arrived on the scene. At 19:12:49 he called for Engine 12 to be dispatched to the fire.

When Engine 11 reached the front of the building, Captain 11 noted that Engine 10 had taken the first-arriving engine position and that Engine 11 would be responsible for laying the supply line. He directed his crew to lay a supply line to Engine 10.

Captain 11 went to the front door and entered the showroom to check for fire extension into the building. Inside the showroom he met the Assistant Chief and two store employees. The employees led them back through the main showroom and to the right, through an opening into the west showroom. They arrived at the double doors that provided access from the west showroom to the loading dock. They did not observe any indications of smoke or fire in the main showroom and only encountered a small amount of smoke at the ceiling level when they reached the double doors.

The Assistant Chief opened one of the double doors and they immediately observed smoke and flames involving furniture on the loading dock to the right of the doorway. The draft pulled the door out of his hand as air from the showroom was drawn toward the fire. Captain 11, who was wearing protective clothing, was able to pull the door closed with a gloved hand.

[8] Engine 10 arrived faster than usual, because they were returning from training when the alarm was transmitted. Engine 10 was less than one minute behind Engine 11 approaching the fire scene. When Engine 11 turned on Wappoo Road, Engine 10 continued west to the front of the fire building.

At 19:13:17 Captain 11 transmitted the message, “I need an inch-and-a-half inside this building.” This message was not specifically directed to anyone.

At 19:13:46, The Assistant Chief ordered Engine 15 to respond to the fire with instructions to bring a 1-1/2 inch line inside the building to the right side. (Engine 15 was en route to fill-in at Station 11 at that time.)

Engine 10

When Engine 10 was in position on the west side of the building, Captain 10 pulled a booster line (1-inch diameter, rubber hose on a reel) and began to attack the exterior fire, while Firefighter 10 and Engineer 10 deployed a 1-1/2 inch preconnected line.

After knocking down most of the exterior fire, Captain 10 and Firefighter 10 advanced the 1-1/2 inch line up the ramp and into the loading dock through the sliding door. They were able to advance approximately 20 feet into the loading dock while directing their stream onto the burning furniture.

Engine 11

While Captain 11 went inside the Sofa Super Store with the Assistant Chief, Engineer 11 prepared to lay a supply line to Engine 10. Firefighter 11, following the Charleston Fire Department standard operating procedure, took the soft sleeve (the hose used to connect a pumper to a hydrant) and a hydrant wrench and set out on foot, eastbound on Savannah Highway toward a hydrant. Anticipating a first due arrival, he had already donned his full protective clothing and SCBA backpack - he removed his SCBA and left it on the street in front of the Sofa Super Store.

Firefighter 11 was at the intersection of Savannah Highway and Wappoo Road when he observed Engine 11 repositioning at the front of the building. Assuming that the plan had changed, he returned to the fire scene, where he obtained another SCBA from the apparatus and prepared to enter the fire building.

Ladder 5

Ladder 5 arrived at 19:12:25 and positioned the tower ladder at the front of the Sofa Super Store near the main entrance. When Captain 11 transmitted the request for a line inside the building, Captain 5 directed Engineer 11 to position his apparatus near the front doors, with the rear toward the building. The crew of Ladder 5 then began advancing a 250 foot preconnected 1-1/2 inch attack line from Engine 11 into the building.

Presumably, Captain 5 had heard the Assistant Chief call for Engine 12 to respond to the fire, followed by Battalion Chief 4's instruction to Engine 12 to lay a supply line to Engine 10. This instruction was transmitted immediately after Engine 12 was dispatched to the fire and a few seconds before Captain 11 called for a line inside the building. This would have caused Captain 5 to believe that Engine 11 was uncommitted. In addition, Engine 11 was on the street in front of the building at that time, while Engine 10 had backed down the driveway on the west side and could not be seen from the front of the building.

Captain 11 encountered the crew of Ladder 5 advancing hose into the main showroom and directed them toward the double doors. He asked Captain 5 why Engine 11 was at that location instead of laying a supply line for Engine 10. Captain 5 replied that another company was providing the supply line for Engine 10.

As the hose line was extended, they realized that the 250 foot preconnected line was not long enough to reach the double doors. Captain 11 went outside and disconnected the hose from the outlet at the rear of Engine 11. He then removed the nozzle from the other preconnected line and joined the two lines together, extending the attack line to 500 feet[9]. He helped feed the additional hose through the front doors and into the showroom, assisted by Firefighter 11.

> At 19:14:10 the Assistant Chief advised Battalion Chief 4 that the fire on the loading dock was advancing toward the retail area. He reported "I've got fire inside the rear of the building and it's walking its way right on into the showroom." The Assistant Chief believed that the wall between the loading dock and the west showroom was brick construction and that the firefighters would be able to stop the progress of the fire at the double doors.

The Assistant Chief called for the attack line from Engine 11 to be charged at 19:15:05. Ladder 5 called for the line to be charged at 19:15:56. By this time, Captain 11 and Firefighter 11 were with the crew of Ladder 5 at the double doors, waiting for the line to be charged. There was only a moderate amount of smoke and no sensation of heat in that part of the building at that time. Captain 11 sent Firefighter 11 back to the apparatus to determine why the line had not been charged.

[9] The direct rectilinear distance from the main entrance to the double doors was approximately 188 feet - measured straight back from the front entrance, followed by a right turn to reach the west showroom and a left turn to reach the double doors. The showroom aisles were narrow and did not provide a direct path from the entry point to the loading dock. While 250 feet of hose would not reach the doors, extending the line to 500 feet provided approximately 200 feet of excess hose that had to be distributed along the length of the line. Each additional length of hose creates additional friction loss (reduction in pressure) as water flows through the hose.

Photo 3: The earliest photo of the front of the Sofa Super Store, taken at approximately 19:16. (Photo courtesy of Lindsay Ackermann)

After waiting a few moments for the line to be charged, Captain 11 returned to the main entrance, where he found that Engineer 11 was unable to engage the pump on Engine 11. Engine 11's apparatus had an idiosyncrasy that required the pump panel throttle control to be fully retracted when the apparatus was placed in pump gear. If the throttle was advanced, even minimally, the pump would go in gear but the pump panel throttle would not operate.

Being familiar with the vehicle, Captain 11 was able to perform the required procedure and successfully engage the pump and charge the 1-1/2 inch attack line. He then went back inside the building, where he observed that Captain 5 was operating the 1-1/2 inch line inside the loading dock and Engineer 5 was positioned at the double doorway. The members from Ladder 5 were using their self-contained breathing apparatus at that time.

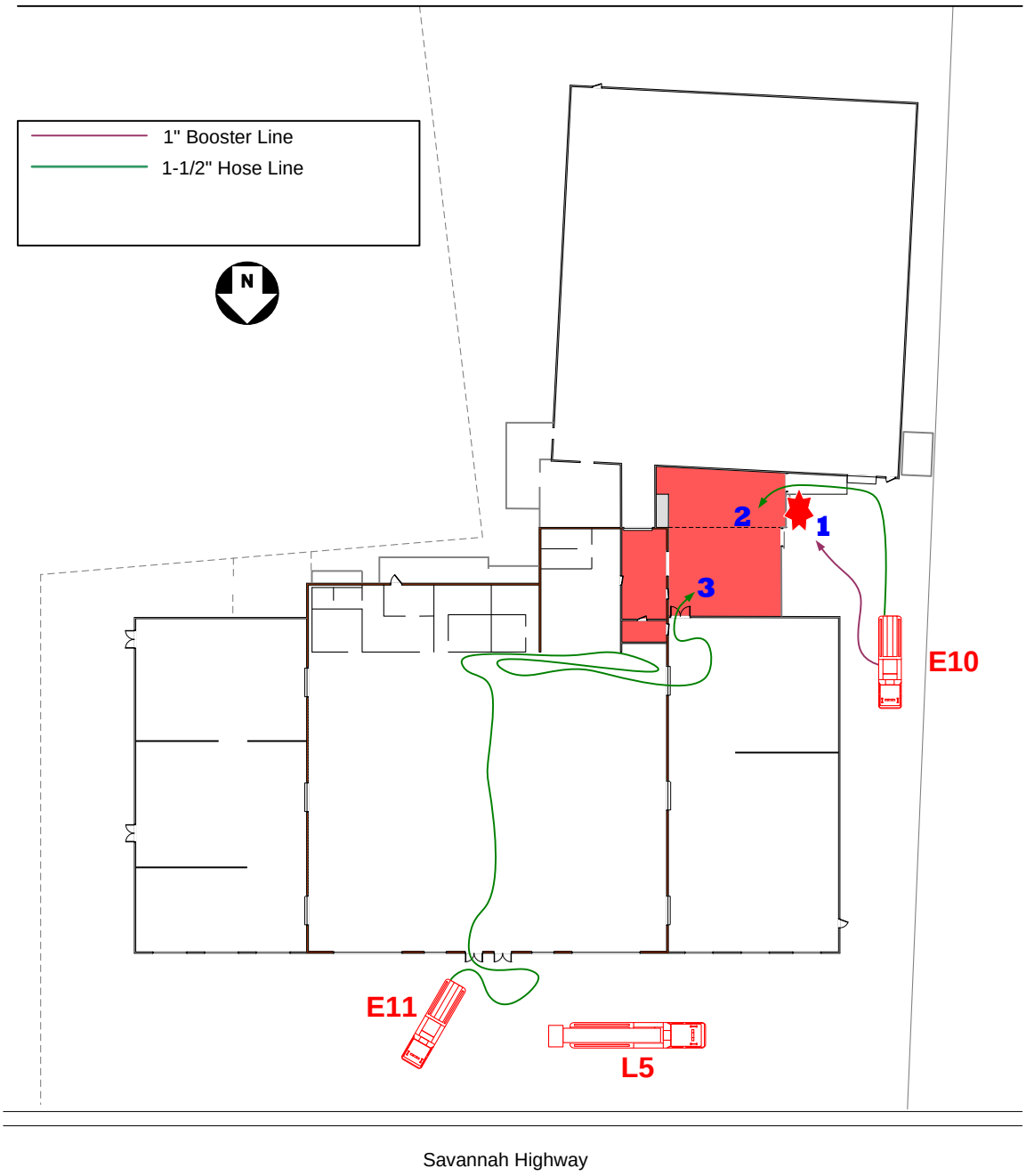

Figure 10: Initial attack hose lines in operation. (Approximate time 19:16)
1: 1" booster line from Engine 10 attacking exterior fire.
2: 1-1/2" preconnect from Engine 10 advanced into the loading dock
3: 1-1/2" preconnect from Engine 11 advanced by Ladder 5 crew through the showrooms to the double doors and into the loading dock.
The fire has extended across the loading dock and into the holding room.

Engine 16

At 19:15:15, the Assistant Chief directed Engine 16 to come to the front of the building and to bring a 2-1/2 inch hose line through the front door. Captain 16 and Firefighter 16 went to the rear of Engine 11 and began to remove 2-1/2 inch hose, while Engineer 16 parked the apparatus on Savannah Highway and donned his protective clothing and SCBA. Upon reaching Engine 11, Engineer 16 encountered Engineer 11 who told him that he needed a supply line.

Engineer 16 checked with Captain 16 and then returned to his apparatus, removed his SCBA and turnout coat, and pulled enough hose from the 2-1/2 inch bed to hand the end of the supply line to Engineer 11. At 19:17:36, the Assistant Chief transmitted, “Alright, 16, go to the hydrant.”

Captain 16 and Firefighter 16 advanced the 2-1/2 inch attack line through the showrooms to the double doors. When they reached the area in front of the double doors, they encountered Captain 11 and the crew from Ladder 5.

Engine 12

Engine 12 was dispatched to the fire at 19:12:53. Immediately after the dispatch message was transmitted, Battalion Chief 4 instructed Engine 12 to lay a supply line to Engine 10[10]. Battalion Chief 4 repeated the instruction to Engine 12 as they were arriving on the fire scene at 19:17.

Engineer 10 had pulled a 2-1/2 inch hose line from Engine 10 out to Savannah Highway to wait for the arrival of Engine 12. Engineer 12 connected the 2-1/2 inch line from his apparatus to the line from Engine 10, while Captain 12 and Firefighter 12A walked back toward the loading dock. Firefighter 12B started out on foot toward the hydrant that was located at the intersection of Blitchridge Road and 1st Drive. When the engine arrived at the hydrant, Firefighter 12B completed the hook-up procedure. At 19:20:31 Engineer 12 advised Engine 10 that he was charging the supply line.

Fire Chief

The Fire Chief arrived on the fire scene at 19:16:32 and met Engineer 12 shortly thereafter as he was connecting the 2-1/2 inch hoses from Engine 12 and Engine 10 together. The Fire Chief pointed the way to the hydrant and secured the hose as Engine 12 laid the supply line to the hydrant.

[10] This instruction was acknowledged by Captain 12 as he prepared to respond.

The Fire Chief then met briefly with the Assistant Chief in the parking lot near the northwest corner of the fire building. The Fire Chief indicated that he would direct operations at the rear of the building, where the fire appeared to be most severe, while the Assistant Chief should continue to direct operations at the front of the building.

Engine 15

When Engine 15 arrived on the scene at 19:17, the 1-1/2 inch line that had been taken into the building by Ladder 5 was already charged with water. The 2-1/2 inch line that had been stretched by Engine 16 was still dry.

PHASE TWO OPERATIONS - 19:19 TO 19:25

Captain 10 and Firefighter 10 operated their 1-1/2 inch line inside the loading dock for 3 to 4 minutes before the fire intensified, forcing them to crouch down and then begin to back out. At that moment the fire burned through their hose line, causing it to rupture near the doorway where they had entered. The rupture sent a heavy spray of water upward that provided a safe path for Captain 10 and Firefighter 10 to exit. When they reached the exterior, Firefighter 10 realized that the lens of his SCBA face piece was deformed from the heat exposure. Captain 10 noted that while they were inside, there were indications that another line was operating on the fire from the opposite side of the loading dock.

Captain 12 and Firefighter 12A reached the loading dock just after Captain 10 and Firefighter 10 had exited from the loading dock. They clamped the ruptured line, pulled the nozzle outside, and replaced the damaged section of hose. Captain 12, Captain 10, and other firefighters then attempted to advance the 1-1/2 inch line back into the loading dock. The Fire Chief, who had just arrived in that area, instructed them to back out and hold their position at the doorway – not to take the line back inside the loading dock.

At 19:19:36, Captain 16 called for the 2-1/2 inch attack line that had been taken into the showroom to be charged. The Assistant Chief advised Engineer 11 not to charge the 2-1/2 inch line until the supply line from Engine 16 was charged[11]. Captain 16 was not advised of the delay in charging the line.

Captain 11 was with Captain 16 near the double doors and began using air from his SCBA while waiting for the 2-1/2 inch hose line to be charged. During this period Captain 16 made a statement to the effect that, “if this fire gets behind us, we’re in big trouble.”

[11] Engine 11 was already operating a 1-1/2 inch line using water from the 750 gallon on board tank. The additional flow from the 2-1/2 inch line would have consumed the remaining water supply in approximately 2 minutes.

After waiting additional time for the line to be charged, Captain 11 went back out to Engine 11 to find out if there was a problem. Smoke was banking down in the main showroom and he noted that the temperature was increasing. Captain 11 had to follow the hose line to find his way out. He heard the voices of two crewmembers from Engine 19 who were on their way into the showroom as he was leaving.

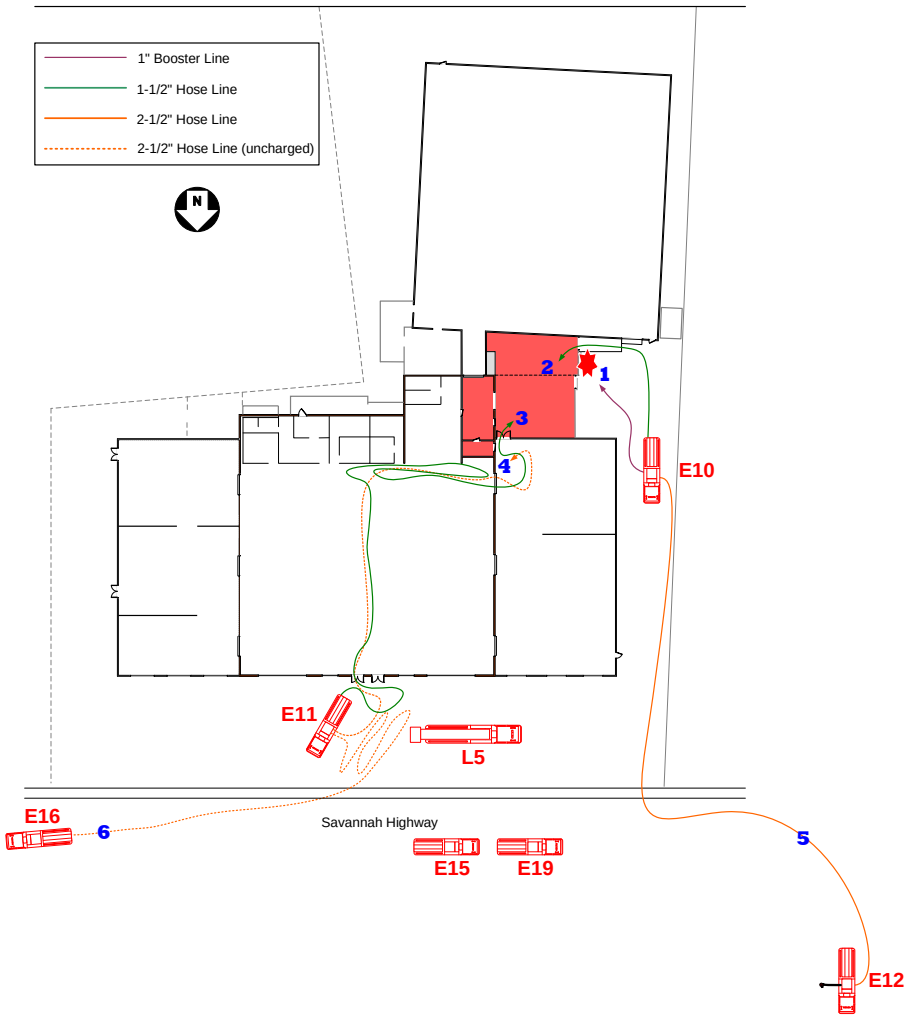

Figure 11: Additional hose lines stretched. (Approximate time 19:20)
4: 2-1/2" attack line (uncharged) from Engine 11 advanced by Engine 16.
5: 2-1/2" supply line for Engine 10 – Engine 12 pumping at hydrant.
6: 2-1/2" supply line for Engine 11 – Engine 16 en route to hydrant.
The fire is still concentrated in the loading dock and the holding room, although heat and smoke are spreading into the adjacent areas, including the void spaces above the showroom ceilings.

Engine 15

After their arrival on the scene at 19:17:30, Captain 15, Firefighter 15A and Firefighter 15B went directly to the front entrance and followed the two hose lines into the building at approximately 19:19. They encountered smoke approximately halfway back into the showroom and stopped to don their SCBA face pieces.

After advancing farther into the store, Captain 15 directed Firefighter 15B to go back outside to get a hose line and bring it inside[12]. When he returned with a booster line from Engine 11, Firefighter 15B was unable to find his Captain or Firefighter 15A in the smoke-filled interior. Engineer 15 entered the showroom after the other members of Engine 15 but was unable to locate them in the smoke. (Approximate time 19:20)

Engine 19

Engine 19 reported on the scene at 19:20:08. The apparatus was parked in the middle turning lane of Savannah Highway and all three crew members entered the showroom through the front doors. The Assistant Chief met Captain 19 in the front part of the showroom and directed him toward the area where Engine 16 and Ladder 5 were already operating. Engineer 19 and Firefighter 19 followed Captain 19. The Assistant Chief recalled that there was enough smoke in the showroom at that time to obscure visibility, but conditions did not require the use of his self-contained breathing apparatus.

Engine 6

Engine 6 was directed to respond to the fire scene by the Fire Chief at 19:19:12, with instructions to “Park your truck in the middle of the street on Savannah Highway and come in the front door.” After reporting on the scene at 19:21:50, Captain 6 and Firefighter 6 followed the hose lines through the front door into the showroom. (Approximate time 19:23) Heavy smoke was banked down to the floor a few feet inside the showroom; they had to use self-contained breathing apparatus and feel their way along the hose lines to find their way to the back of the store.

At 19:23:09 the Fire Chief called the Assistant Chief and asked “Alright, Larry, how we looking inside the store?” The Assistant Chief replied “Chief, I’m trying to get back to it now.”

[12] Captain 15 had previously instructed Firefighter 15B to stay close to him, because it was the firefighter’s first duty shift on the Charleston Fire Department.

Engineer 6 donned his protective clothing and SCBA and entered the showroom approximately one minute behind Captain 6 and Firefighter 6. (Approximate time 19:24[13]) He noted that the atmosphere was clear for a few feet inside the front door, before he encountered a wall of dark smoke from floor to ceiling. He followed the hose lines leading toward the rear of the main showroom.

Operations inside the Showrooms

At this point in the operation, approximately 19:25, all of the firefighters who were inside the showrooms were operating in zero visibility conditions.

Eight firefighters are presumed to have been in the vicinity of the double doors at the rear of the west showroom at this time: Captain 5, Engineer 5, Firefighter 5, Captain 16, Firefighter 16, Captain 19, Engineer 19 and Firefighter 19.

Captain 15 and Firefighter 15A were in the rear of the main showroom, most likely in the area close to the holding room, searching for the fire. (They had turned to the right after reaching the rear of the main showroom.) The temperature was increasing as they penetrated deeper into the building, although no flames were visible. Captain 15 told Firefighter 15A that they had to stop the fire from advancing across the rear of the showroom. He directed Firefighter 15A to try to find a hose line while he continued to search[14].

Firefighter 15B had obtained a booster line from Engine 11 and was looking for his Captain in the main showroom. He was alone inside the showroom for several minutes, while encountering increasing heat. At some point he observed a red glow overhead and began to flow water from the booster line toward the ceiling. He operated the booster line in this area for several minutes.

Engineer 15 had entered through the front doors and was also looking for the other members of his company inside the smoke-filled showroom. His low air pressure alarm activated and he went outside to obtain a replacement air cylinder for his SCBA.

Firefighter 11 had also re-entered the showroom and was looking for his Captain in the rear of the main showroom. He heard the voices of other firefighters, although he could not see them.

Captain 6 and Firefighter 6 were in the rear of the main showroom, probably in the vicinity of the holding room. They were encountering increasing temperatures as they attempted to locate the fire.

[13] The entry time for Engineer 6 may have been as late as 19:26 or 19:27. He recalled that a civilian had told him that someone was still inside the building as he was entering through the front doors.

[14] Firefighter 15A recalled that they had heard radio traffic referring to a person trapped in the rear of the building. He believed that they were searching for the person and the fire simultaneously.

Engineer 6 was unable to find the other members of his company inside the smoke-filled store. He followed the hose lines to the rear of the main showroom noting that the temperature was increasing as he moved deeper into the store. He was aware of the presence of other firefighters in the same general area, but could not identify them. Engineer 6 was carrying a pike pole and when he reached the back of the showroom, he began trying to open a wall and a section of the ceiling to see if he could find a concealed fire. He observed flames at the ceiling level and shouted for one of the other firefighters to bring a hose line[15].

Fire Extension into Warehouse

At approximately 19:25, Saint Andrews Fire Department Engine 2, Rescue 1 and Car 3 arrived at the fire scene with a total of 5 personnel[16]. The Assistant Chief from Saint Andrews met the Charleston Fire Chief on the west side of the fire building and offered to provide assistance. He reported that the offer was initially declined.

The fire had extended into the large warehouse at the rear of the Sofa Super Store property by this time. The Saint Andrews Assistant Chief offered to deploy his units to attack the warehouse fire from the south side. This offer was accepted and the Saint Andrews Assistant Chief began directing his companies to set-up on Pebble Road. Eventually, Saint Andrews Engine 1, Engine 7, and Ladder 1 operated on Pebble Road.

Firefighter 12B returned from the hydrant and began forcible entry into the warehouse with Firefighter 12A. Off-duty firefighters and a fire department mechanic who had arrived on the scene assisted with the forcible entry.

Two additional 2-1/2 inch hand lines were deployed from Engine 10 to attack the fire in the warehouse. Both 2-1/2 inch lines were positioned in front of the large roll-up door on the north side of the warehouse and began flowing water before the door was opened. Observing the volume of fire inside the warehouse, Battalion Chief 4 and the Fire Chief both directed the companies to stay outside and operate the lines from the doorway.

At 19:25:26, the Fire Chief called Engine 12 to increase the pressure in the supply line by 50 pounds in order to provide for the increased flow. Several additional requests for more pressure were transmitted during the following minutes.

[15] Engineer 6 did not have his portable radio. It had been left behind at the apparatus,
[16] The Saint Andrews firefighters had been eating dinner at a restaurant a few blocks west of the Sofa Super Store when they became aware of the incident. They responded to the scene to determine if the fire was in their jurisdiction or the City of Charleston.

Engine 3, which had been attending an event in Summerville, was directed to cover at Fire Station 16/19 at 19:24.

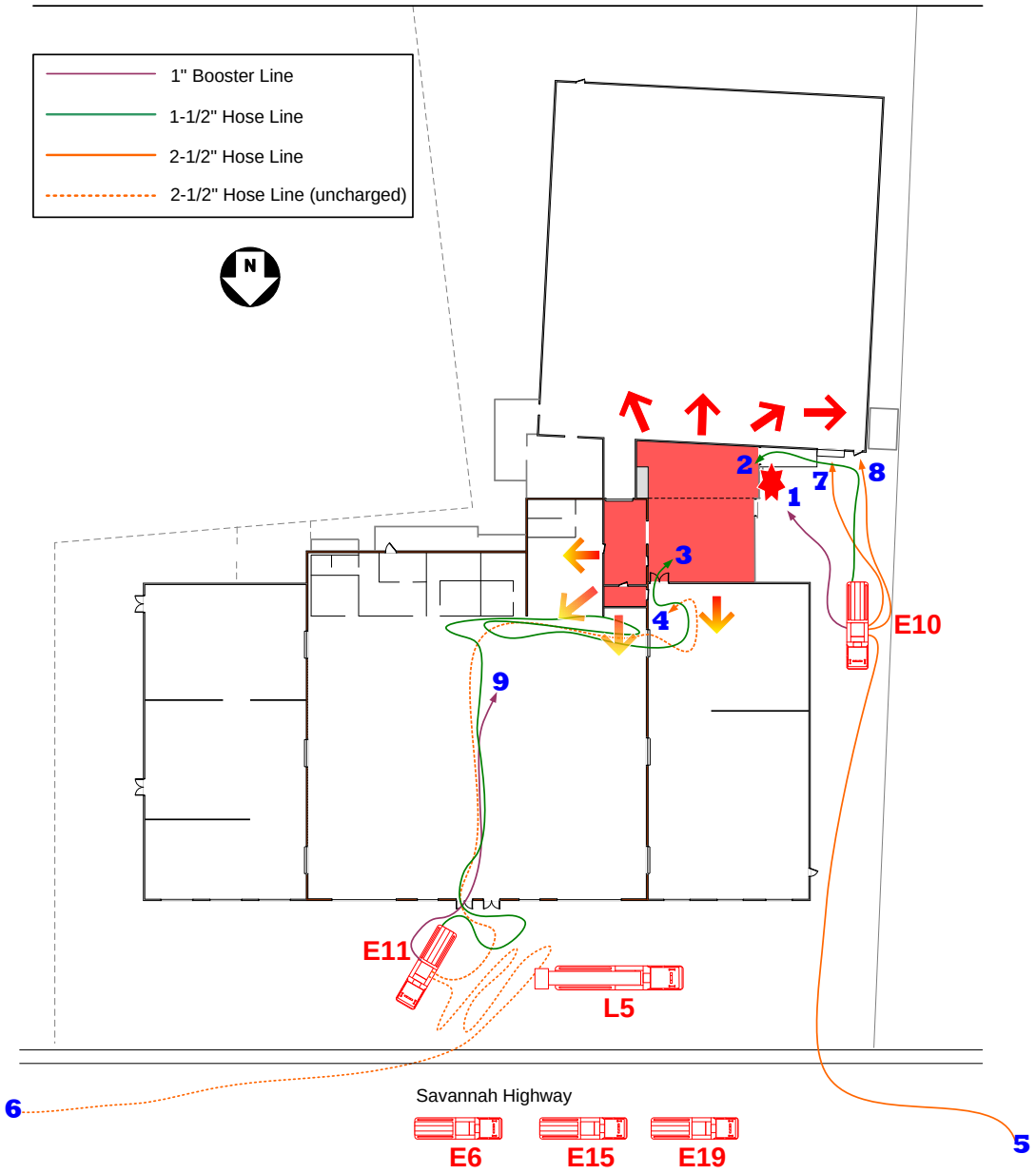

Figure 12: Additional hose lines in operation. (Approx 19:25)
7: 2-1/2" attack line from Engine 10.
8: 2-1/2" attack line from Engine 10.
9: 1" booster line from Engine 11 – advanced into showroom by Engine 15.
The fire has spread to the warehouse and to the void spaces above the main and west showrooms.

PHASE THREE OPERATIONS - 19:26 TO 19:37

Trapped Employee Reported

At 19:26:35 one of the two Fire Dispatchers on duty picked-up a 9-1-1 call from an employee who stated that he was trapped in the rear of the Sofa Super Store. The trapped individual was calling on his cell phone and was in severe emotional and physical distress. He said that he was beating on the wall of the building with a hammer.

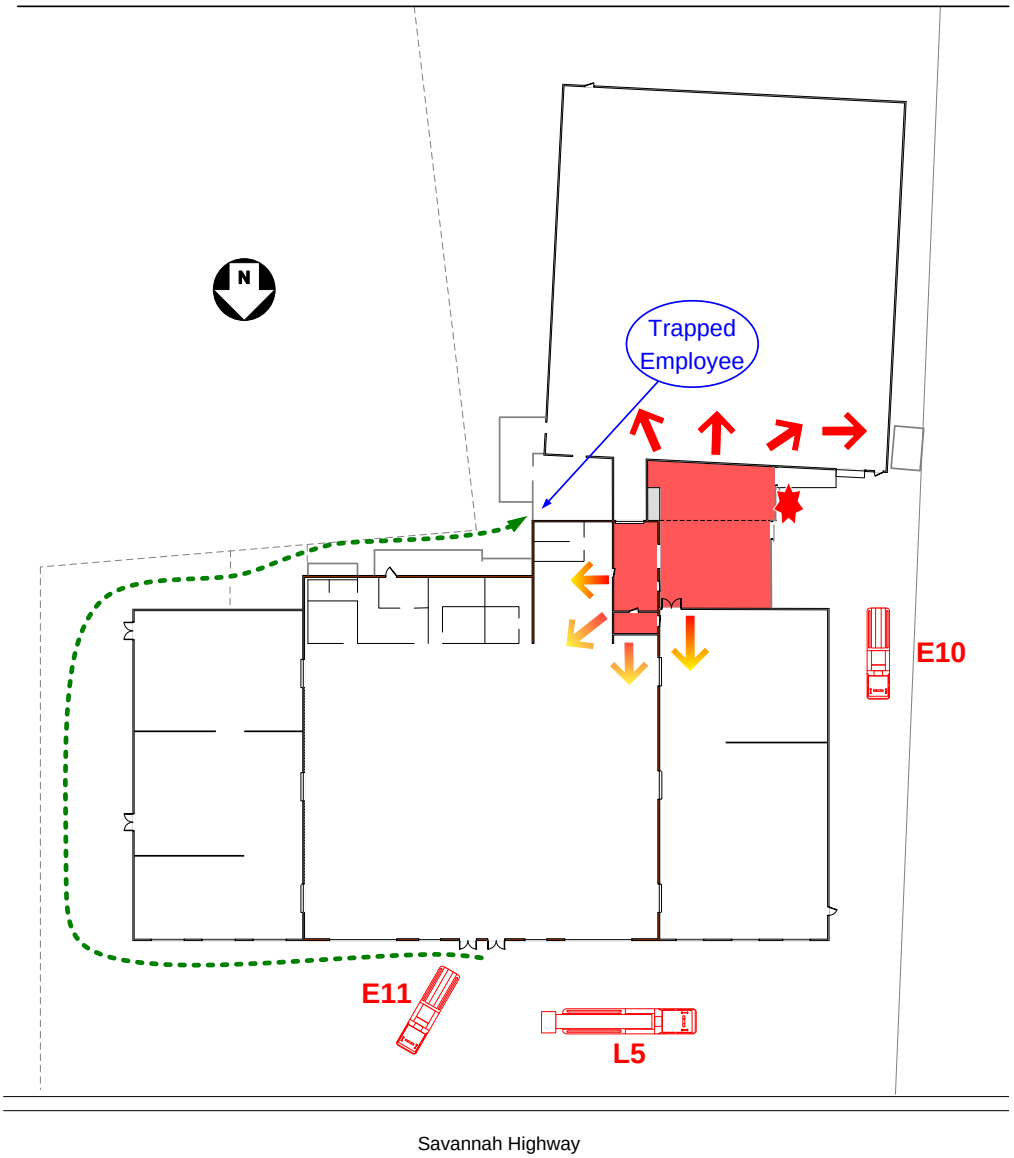

Figure 13: The employee was trapped in a workshop room that was located between the warehouse and the main showroom. The rescue team came from the front of the showroom building, around the east end to the rear, and cut through the metal wall to rescue him.

At the same time, the second Fire Dispatcher advised the Fire Chief that they were receiving a 9-1-1 call indicating that a person was trapped in the building. This information had been provided by a Charleston Police 9-1-1 operator who had spoken to the trapped individual before transferring the call to Fire Dispatch.

The Assistant Chief was inside the showroom when he heard the radio transmission to the Fire Chief and returned to the front entrance. The store manager and the assistant manager had previously assured him that everyone was out of the building. They subsequently noticed that the employee's car was still in the parking lot and told the Assistant Chief that he must still be inside at the back of the building.

At 19:27:55, the Fire Chief called the Assistant Chief and advised him that they had the door open to the back building and a stacked tip nozzle flowing water inside. The Assistant Chief responded that the managers had confirmed that an employee must still be in the building. The Fire Chief told the Assistant Chief, "Just do what we can do."

The Assistant Chief then walked around the east end of the building to the rear, accompanied by the two managers. When they reached the southeast corner of the building they encountered a locked gate blocking their path. At 19:28:42 the Assistant Chief called on his portable radio for "any firefighter that's in front, up by number 11" to come to the rear to assist him.

Battalion Chief 5 had just arrived at the front entrance when he met the Assistant Chief who was headed toward the rear of the building. He was attempting to assist Engineer 11 with a water supply problem when he heard the Assistant Chief calling for manpower. Four Saint Andrews firefighters, who had been advised of the trapped employee by a police officer, were approaching the front of the building at that time. These firefighters had arrived aboard Saint Andrews Engine 2 and Rescue 1.

Battalion Chief 5 and three Saint Andrews firefighters went around the east end of the building to assist with the rescue. Saint Andrews Captain 2 called his Chief and asked him to bring the thermal imaging camera to the front of the building[17]. He also instructed the fourth Saint Andrews firefighter to obtain a circular saw from their apparatus.

The firefighters forced entry through the gate and worked their way around to the rear of the building to the workshop area, where one of the managers indicated that the employee should be located. Based on the sound of the hammer and the manager's directions, they began to cut a hole in the metal exterior wall of the workshop.

[17] The Saint Andrews Assistant Chief attempted to deliver the thermal imaging camera to the Charleston Fire Chief who was unaware that it had been requested and said that it was not needed at that time.

Almost immediately, the trapped individual stuck a hand out through the opening. The opening was quickly enlarged to allow the firefighters to pull the man to safety. At 19:31:19 Battalion Chief 5 reported "Car 5 to Dispatcher – we got the man."

Engine 3 was ordered to respond to the fire scene by the Fire Chief at 19:31:11. After acknowledging the order, the Fire Chief directed them to supply water to Ladder 5 when they arrived on the scene.

Photo 4: Saint Andrews firefighters escort the rescued civilian to the front of the building at approximately 19:33. (Photo courtesy WCIV)

Firefighters in Distress

The recorded radio traffic included 16 distress messages that were transmitted by firefighters inside of the Sofa Super Store. Distress messages were recorded from Firefighter 16, Firefighter 5, and Engineer 5. The recordings included additional distress messages in which the firefighter speaking could not be identified. None of these messages were heard by a command officer on the scene.

The first fragment of a distress message was recorded at 19:27:44 when an unknown firefighter is heard saying "… lost inside or … trapped inside". The first clearly discernable distress message, "… which way out?" was transmitted by Firefighter 16 at 19:29:00. Firefighter 5 called for help at 19:30:22. Engineer 5 activated the emergency button on his portable radio at 19:34:40 and later identified himself on the radio. A complete transcript of all radio and telephone recordings is contained in Appendix B of this report.

Engineer 6 was somewhere in the rear of the main showroom, enveloped in smoke, when a panic-stricken firefighter ran into him. Within seconds, other firefighters ran into Engineer 6 and one of them crawled between his legs. He was unable to identify the firefighters in the complete darkness; however, he had no doubt that they were disoriented and they were either running out of air or had already run out of air. Engineer 6 was only in contact with the firefighters for a few seconds.

A moment later Engineer 6 encountered Firefighter 15A, who was also disoriented and running short of air. Firefighter 15A had located a charged 1-1/2 inch hose line on the floor and followed it to the nozzle. The line was entangled in furniture and he was unable to move it. At this point the heat conditions were becoming severe.

Firefighter 15A lost contact with the hose line and realized that he was alone and lost in the smoke. He could not find Captain 15 in the area where they had been together a few moments earlier. When he met-up with Engineer 6, his low air pressure alarm was vibrating. Engineer 6 told Firefighter 15A that he was in contact with a hose line and they could use it to find their way out. They followed the line back until they could hear the sound of Engine 11, which was outside the main entrance. From that point they followed the sound until they were outside the building. They exited at approximately 19:33 hours.

Engineer 6 then went back inside, following the hose lines toward the rear of the store. By this time, Captain 6 had located the 1-1/2 inch line and followed it to the nozzle. The atmosphere was very hot and flames were visible overhead. Captain 6 opened the nozzle and began flowing water, while Firefighter 6 attempted to pull more hose. Captain 6 believes that he was at the double doors and flowing water into the loading dock.

Captain 6 operated the line for a few minutes and then shut down the nozzle to assess conditions. When he reopened the nozzle, water flowed momentarily and then stopped. He waited for the flow to be restored until flames began swirling overhead and the heat became too intense to remain in that area. At that point, Captain 6 abandoned the 1-1/2 inch nozzle and tried to find his way out. He was disoriented and his air supply was exhausted when he encountered Engineer 6. Engineer 6 led his Captain and Firefighter 6 back to the main entrance, exiting at approximately 19:35 hours.

Photo 5: The crew of Engine 6 and Engineer 15 emerge from the structure. Battalion Chief 5 is breaking a window in the background. This photo was taken at 19:35:14. (Photo courtesy Bill Murton, Charleston Police Department)

Engineer 15, Firefighter 15B and Firefighter 11 also made their way out of the showroom at approximately the same time. Each of them had remained inside the showroom until their low air pressure alarms began vibrating and then followed the hose lines back to the main entrance. Firefighter 15A had obtained a replacement air cylinder for his SCBA and briefly reentered the showroom. He exited a second time as conditions inside the showroom became untenable.

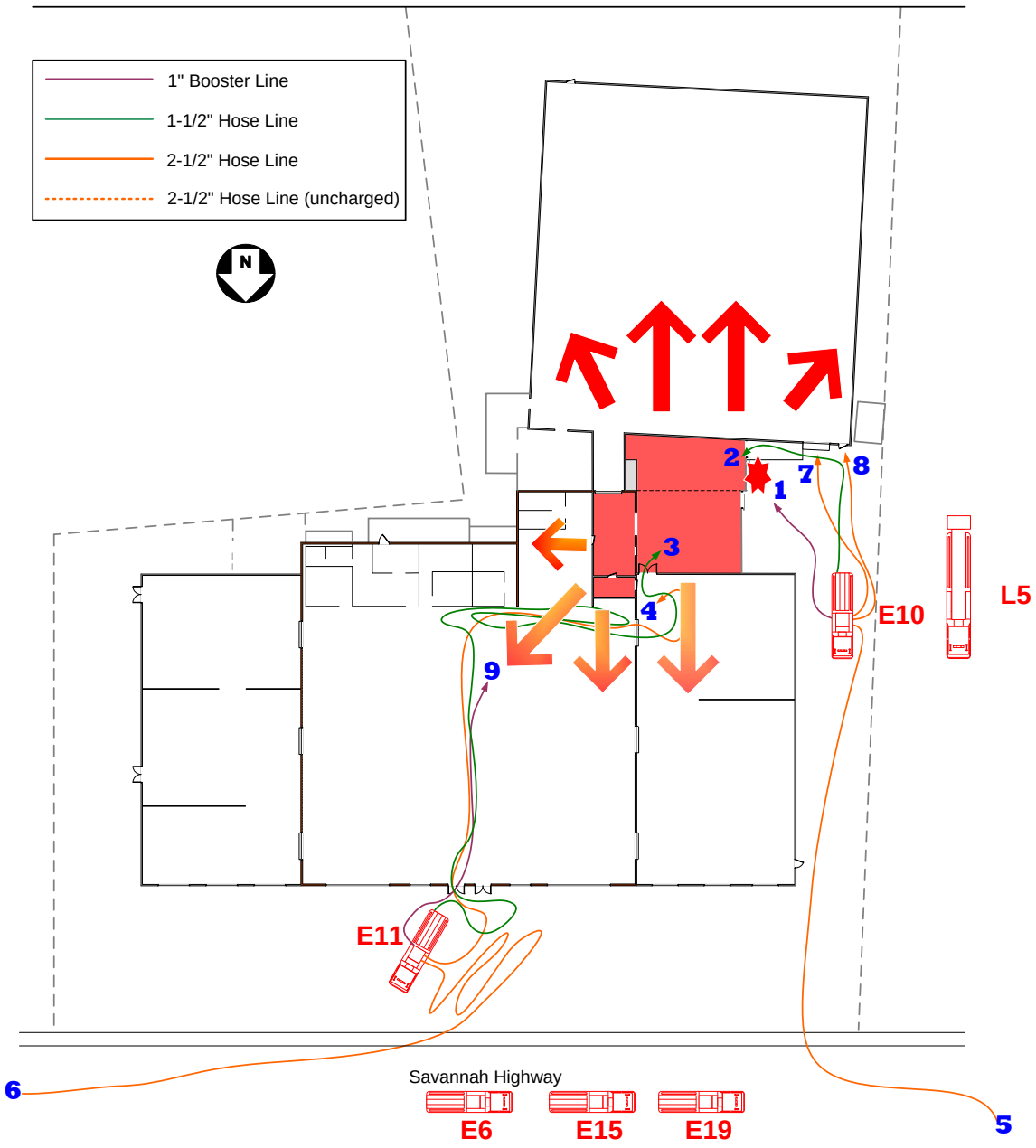

Figure 14: Conditions in the rear of the showrooms changed quickly, causing the firefighters to abandon their hose lines and attempt to find their way out of the building. The fire was extending from north to south inside the warehouse at the same time. (Approximate time 19:28 – 19:29)

Reaction to Firefighters in Distress

The first person outside the building to become aware that firefighters were in trouble inside was an off-duty Battalion Chief (Car 303), who was enroute to the scene in his personal vehicle. He heard traffic on his portable radio that indicated a firefighter was lost and unable to find his way out of the building. The radio traffic was not heard by anyone at the fire scene.

Car 303 attempted to contact the Fire Chief at 19:30:27 to advise him of the situation, but was unable to establish contact on the busy radio channel. He continued to the fire scene as quickly as possible, parked his vehicle, and located the Fire Chief on the west side of the fire building, near the loading dock. The face-to-face exchange with Battalion Chief 303 was the Fire Chief's first indication that firefighters were in distress.

A series of radio messages between the Fire Chief and the Assistant Chief began at 19:33:08. At that time, the Assistant Chief was just returning to the front of the building after participating in the rescue of the trapped employee at the rear. The Fire Chief told him that someone had called a "Mayday" and asked if everyone was out at the front of the building. The Assistant Chief responded that firefighters were still inside the building at the front. A few seconds later he reported that Firefighter 15A had come out of the building, but that he had not called a "Mayday".

The Assistant Chief noted that conditions inside the showroom had deteriorated radically since he had left to go around to the rear of the building. The interior was now filled with smoke down to the floor and smoke was issuing from the front doors.

The Fire Chief reached the front entrance at approximately 19:35. The Assistant Chief directed Battalion Chief 5 and two Saint Andrews firefighters to begin breaking the windows, hoping to provide visibility for the firefighters who were still inside[18]. Captain 6, Engineer 6, Firefighter 6, and Engineer 15 all exited through the main doors at 19:35, just as the first windows were being broken.

Photographs indicate that there was severe heat stratification inside the store at the time the windows were broken. The images indicate that the temperature at the upper level was very hot, down to within 6 feet from the floor. The sequence of photographs indicates that outside air was initially drawn into the showroom when the windows were broken. Within approximately one minute the flow reversed and heavy smoke began to issue from the windows.

[18] Neither the Fire Chief nor the Assistant Chief could recall directing anyone to break the windows. Several witnesses reported that the order was first given by the Fire Chief and then repeated by the Assistant Chief.

Photo 6: Firefighters break out windows to the right of the store entrance. Note air being drawn into the broken windows to the left of the firefighters. The heat stratification inside the showroom is evident. This photograph was taken at 19:35:31. (Photo courtesy of Bill Murton, Charleston Police Department)

Photo 7: Smoke begins to flow from the broken windows on both sides of the store entrance. This photograph was taken at 19:36:05. (Photo courtesy of Stewart English)

Rescue Attempt

The Fire Chief directed two Saint Andrews firefighters (Firefighters SA1 and SA2) to try to enter the store to locate the missing firefighters. Battalion Chief 303, who had just arrived at the front entrance, and Engineer 6, who had obtained a fresh SCBA cylinder, also attempted to enter and conduct a search for the missing crews. The two search teams entered and penetrated a short distance into the store before the rapidly increasing heat forced them to retreat. Firefighters SA1 and SA2 reported that they were briefly in contact with at least one of the missing firefighters inside the showroom, but they were unable to hold onto him.

Both rescue teams observed flames overhead and a flame front moving rapidly from the right rear quadrant of the main showroom toward the front. They described the furniture displays igniting progressively. The heat damaged their protective clothing and all of them suffered first and second degree burns as they crawled out. Flames began issuing from the front windows to the right of the main entrance within seconds after they escaped.

The first flames came through the large windows to the west of the main entrance at approximately 19:37:37. The main showroom became fully involved in flames approximately one minute later as the fire spread across the front of the building from east to west. Within two minutes flames were issuing from all of the large windows across the front of the main showroom while the contents of the west showroom were igniting.

At 19:38:09, the Fire Chief broadcast “Everyone abandon the building.” Captain 11 sounded the air horn on Engine 11 as a signal to abandon the building at approximately the same time. Firefighters SA1 and SA2 noted that the air horn was blowing as they were crawling back toward the front door. They were the last firefighters to escape from the building.

Battalion Chief 303 and Engineer 6 made one last attempt to enter through the front of the building with a hose line. They were only able to advance a few feet before they were forced to back out.

PHASE FOUR OPERATIONS – AFTER 19:38

Defensive Strategy

When the fire came through the front of the store, Engine 16 was pumping a single 2-1/2 inch supply line to Engine 11 at the front door. Engine 12 was pumping a single 2-1/2 inch supply line to Engine 10 in the alley on the west side of the fire building. Ladder 5 was setting up in the field to the west of the store, waiting for Engine 3 to provide a water supply. Engine 6, Engine 15, Engine 19, and Saint Andrews Engine 2 and Rescue 1 were all parked on Savannah Highway. Engine 3 arrived on the scene at 19:30:19.

Initially, all the hose lines at the front of the structure led into the building and could not be used by firefighters on the exterior. The lines that had been stretched into the showroom remained charged until they were reported to be free flowing inside the building some time later.

An additional 2-1/2 inch attack line was assembled and attached to a discharge on Engine 11. A booster line that had been spraying the ground below Engine 11 was moved to the door. The 2-1/2 inch line was charged, but the limited water supply available to Engine 11 rendered it ineffective. A second 2-1/2 inch handline began to operate at the front of the building at approximately 19:46.

Photo 8: Firefighters flow a 2-1/2 inch handline at the front of the store. (Photo courtesy Charleston Post and Courier)

Ladder 5 began to flow water onto the warehouse and the west showroom at approximately 19:46. Initially, Ladder 5 was supplied by a single 2-1/2 inch line. A second supply line was charged at approximately 19:52. Firefighters used Engine 19's apparatus to lay an additional supply line.

A partial collapse of the building façade occurred at approximately 19:50. Firefighters had been operating in the collapse zone moments earlier; however, no injuries occurred. A second partial façade collapse occurred at approximately 19:56.

The roof of the west showroom began sagging into the store in stages beginning at approximately 19:52. The roof over the main showroom collapsed at approximately 19:56.

Firefighters on the west side of the structure flowed several handlines into the warehouse and the loading dock area. At approximately 20:00, firefighters began opening holes in the west wall and flowed water into the west showroom.

Firefighters on the east side of the structure forced entry to two sets of doors on the east wall. An entry was attempted when they heard the sound of a PASS device inside the building; however, they were forced to back out due to fire conditions. Firefighters also cut access panels into the south wall of the east showroom to search for the missing firefighters and attack the fire inside.

Charleston Ladder 4 arrived on the scene at approximately 19:56. The ladder was backed into the parking lot near Engine 11 and the aerial tower was elevated. Ladder 4 began flowing water onto the main showroom and east showroom at approximately 20:03. The water supply for Ladder 4 was established by Saint Andrews Engine 4 using 4-inch supply line.

Car 3, Ladder 1, Engine 1, and Engine 7 of the Saint Andrews Fire Department set up on Pebble Road to protect residential exposures from the fire that was consuming the warehouse. Handlines and a ladder pipe (elevated high-volume water stream) were used in these efforts. The ladder pipe went into service at approximately 20:03.

The main and west showrooms burned extensively. The contents and interior finishes of these showrooms were almost completely consumed. Fire spread into the east showroom was limited because the three fire doors leading to that part of the building closed automatically. The full closure of one door was blocked by a piece of furniture. All of the contents of the east showroom were damaged to some extent, although the structure remained standing after the fire was brought under control.

A number of units from surrounding fire departments, rescue squads, and Charleston County EMS responded to the scene or provided coverage from Charleston Fire Department stations. Most of the off-duty Charleston firefighters reported to the scene to offer their assistance.

Missing Firefighters

There was an immediate realization that one or more firefighters were missing inside the Sofa Super Store, although several individuals stated that they assumed, or at least hoped, that the missing individuals had found other exits and managed to escape. There was no command board or accountability system in place to identify the crews that had gone inside or who had come out.

Firefighter 15A reported that he had lost track of his Captain somewhere inside the store and that Firefighter 15B could be with him. Several radio transmissions were made calling for Captain 15 or anyone from Engine 15; there was no response. Firefighter 15B was later located working on the exterior of the building on the west side, near Engine 10.

A list of missing members was assembled by identifying apparatus on the scene and attempting to find the crew members assigned to each apparatus. Engine 11 was parked at the front of the building and Engineer 11 could not account for Captain 11 or Firefighter 11. They were subsequently located performing other tasks on the incident scene.

The Ladder 5 crew members were not initially identified as missing, because their apparatus was in operation on the west side of the building and it was assumed that they were in the aerial platform of the ladder flowing water on the fire. It was later discovered that Ladder 5 had been repositioned and was being operated by off-duty personnel. All three members assigned to that company were missing.

Captain 16 and Firefighter 16 were subsequently added to the missing list, along with Captain 19 and Firefighter 19. Engineer 19 was added to the list when it was determined that he was not with his apparatus.

Recovery Operations

When the main body of fire had been suppressed, the Fire Chief and senior officers conferred on how best to search for the remains of the missing firefighters. A team was assembled to begin searching the main showroom area at approximately 20:40 hours. They began their efforts walking on top of the collapsed roof.

Void spaces were found in some areas that allowed firefighters to drop down under the deck to perform a search. At 21:08 firefighters discovered the remains of a firefighter. The firefighters believed that they had located Captain 15, the only firefighter known to be missing at that time. When the coroner arrived and the firefighter's identification was located, the firefighter was identified as Engineer 19. At the time Engineer 19 was identified by the coroner, his name was not on the list of missing firefighters. The remains of Firefighter 19 were found in the same area a short time later.

Hydraulic rescue tools and power saws were needed to remove the metal roof that had collapsed over the main showroom. After the roof decking and other wreckage had been removed from the area of the bodies, the County Coroner and a photographer came inside to document the scene. The remains were then packaged in body bags and carried out to the Coroner's vehicle in rescue baskets.

Additional search teams were organized to continue searching for the missing members. The recovery process continued through the night.

Locations of Deceased Firefighters

The remains of all nine deceased firefighters were found in the main and west showroom buildings. The locations of the bodies suggest that all of the deceased firefighters were searching for ways out of the building when they either ran out of air or became incapacitated by the rapidly growing fire. The circumstances suggest they were lost in the heavy smoke and became disoriented.

Eight of the firefighters were last seen in the vicinity of the double doors that connected the west showroom to the loading dock, or headed in that direction. The ninth deceased firefighter (Captain 15) was last seen in the same general area, but the last surviving firefighter to see him alive, Firefighter 15A, believes that they were on the opposite side of the wall that separated the main and west showrooms. All of the deceased firefighters appeared to have been trying to move away from that area of the building.

All of the deceased firefighters died from combination of smoke inhalation and/or thermal burns. These types of injuries are consistent with being lost or disoriented in a hazardous atmosphere or overwhelmed by rapidly developing fire conditions. Analysis of their air supplies indicates that they were all running out or had run out of air.

The evidence indicates that the structural collapse of the roof occurred after the firefighters were incapacitated or deceased. The roof of the main showroom did not collapse until almost 20 minutes after the interior became fully involved in fire. The roof collapse did not cause their deaths.

Figure 15: Locations of the deceased firefighters as recorded by the Charleston County Coroner.

ANALYSIS

Fire Analysis

Fire Origin

The fire is believed to have originated outside the loading dock, adjacent to the wooden ramp[19]. Packing materials and discarded furniture were frequently piled in this area, awaiting pick-up by a disposal service. The source of ignition is believed to have been discarded smoking materials: the area adjacent to the ramp was used by Sofa Super Store employees as a smoking area.

A fire at this location could quickly spread to the loading dock via the crawl space under the wooden deck or through gaps between the sheet metal wall panels and the front of the deck. The fire could also enter the loading dock through a large ventilation fan opening or through gaps around the sliding doors.

The information provided by the store employee who used a fire extinguisher inside the loading dock indicates that flames were initially observed around the door at the top of the ramp. The fire had extended into the loading dock by the time the first firefighters arrived and heat and smoke were already flowing into the holding room.

The loading dock was approximately 2,200 square feet in area and contained a substantial quantity of furniture and other fuels, including containers of flammable liquids[20]. The dock was constructed of wood and the structure built to enclose it was wood frame covered by sheet metal. The fire had immediate access to all of this fuel.

The Assistant Chief and Captain 11 did not observe any indications of smoke or fire in the main showroom when they first entered. They could not see into the holding room as they passed through the main showroom and entered the west showroom. After entering the west showroom they observed a small quantity of smoke at the ceiling level, just inside the double doors.

When the double doors were unlatched, the intensity of the fire was sufficient to suck the doors open and draw air from the showroom into the loading dock. They observed a free-burning fire involving the furniture on the loading dock. The main body of fire was to the right of the opening and flames were advancing toward the doorway.

[19] The official investigation of the fire cause and origin had not been completed when this report was prepared. The information relating to fire cause and origin in this report is tentative and unofficial.

[20] NIST fire protection engineers estimated the magnitude of the fire in the loading dock at between 50 and 125 MegaWatts.

Fire Extension

Analysis of the fire spread indicates that the fire extended from the loading dock into three separate areas of the Sofa Super Store complex:

1. Into the holding room and then into the interstitial void space above the main showroom:

2. Through the sheet metal wall into the interstitial void space above the west showroom:

3. Through the sheet metal wall into the warehouse.

The fire probably was extending through the open doorway from the loading dock into the holding room when the double doors from the west showroom to the loading dock were opened, or soon after. Highly combustible cushions were stored on racks in the holding room and probably became involved in the fire very quickly. The fire in the holding room could not be observed from the showrooms.

The burning furniture produced large quantities of thick smoke and hot fire gases. The visible smoke was rich in soot and particulates that obscured visibility, while the gases produced by the fire included large quantities of carbon monoxide, which is highly toxic. The gaseous mixture probably contained additional highly toxic products of combustion, including cyanides, along with a rich mixture of unburned or partially burned hydrocarbons that were released from the burning materials. The gaseous mixture was probably hot enough to burn, but lacked sufficient oxygen to ignite within the confines of the structure.

The smoke and hot gases had direct access to the interstitial void space above the main showroom ceiling. The absence of a ceiling in the holding room provided an unobstructed path for the smoke and hot fire gases into this void and spread horizontally above the ceiling.

The heat produced by the fire would have caused the sheet metal panels in the walls adjacent to the loading dock to deform, creating a series of gaps at the seams. The smoke and heated products of combustion would have penetrated through these gaps into the west showroom as well as the warehouse. Inside the west showroom a layer of gypsum wallboard had been installed on steel studs attached to the inner surface of the wall. The interior wall extended from the floor to a short distance above the suspended ceiling and would have caused any smoke and heat that penetrated through the sheet metal to be directed upward into the void space above the west showroom.

The hot fire gases were probably flowing into and accumulating within the void spaces above the ceilings in both showroom areas by the time the first hose lines were being advanced into the building. The heated fire gases had access to the void spaces on both sides of the wall that divided the main and west showrooms, which caused the wall to be ineffective in limiting the spread of the fire.

The rich mixture of hot flammable gases could accumulate and spread horizontally above the suspended ceilings, over the heads of the firefighters who had entered the showrooms. When the void spaces were filled, the smoke would have begun to bank down into the showrooms, obscuring their visibility.

The presence of smoke and hot gases above the ceiling void spaces could have been detected from below by opening ceilings or, possibly, by scanning overhead with a thermal imaging camera. The only thermal imaging camera that was on the scene at that time was assigned to Ladder 5 and was not taken into the building. A second thermal imaging camera arrived on the scene with the Saint Andrews units. This is the camera that was offered to the Fire Chief and later used at the rear of the warehouse by Saint Andrews firefighters.

The void space above the main showroom also enclosed the lightweight steel bar joists that supported the roof. This type of roof structure can collapse quickly and suddenly if the unprotected steel is exposed to the heat of a fire.

The metal roofs retained the heat and fire gases inside the structures, causing them to spread horizontally over a large area. Vertical ventilation would have been the only feasible tactic to release the hot gases from the void spaces above the showrooms. Total containment of the fire would have required rapid vertical ventilation on three sides; north, south and east of the loading dock.

The fire was probably extending into the warehouse at the same time that it was extending into void spaces above the showrooms. The only separation between the loading dock and the warehouse was a single thickness of sheet metal, with furniture in direct contact or in close proximity on both sides. The fire probably ignited contents inside the warehouse by conduction and/or radiation from the heated metal wall.

Conditions inside the Main Showroom

The atmosphere inside the showrooms was clear during the early stages of the incident. Several witnesses reported that the atmosphere inside the main showroom was still clear when the 2-1/2 inch back-up line was advanced and positioned near the double doors. Captain 16 first called for this line to be charged at 19:19:36 hours; however, it could not be charged until the supply line from Engine 16 to Engine 11 was charged.

Captain 11 noted that the 1-1/2 inch line was operating inside the loading dock, through the double doors, when Captain 16 and Firefighter 16 arrived with the 2-1/2 inch line. Captain 5 was operating the nozzle, backed-up by Engineer 5. The members from Ladder 5 were using their self-contained breathing apparatus at that time.

Captain 11 began using air from his SCBA while he was with Captain 16 in the rear of the west showroom, waiting for the 2-1/2 inch line to be charged. He encountered heavier smoke and heat in the main showroom on his way outside to determine why there was a delay in charging the line. This was at approximately 19:22 hours.

Engine 15 reported on the scene at 19:17:30 hours and probably entered the showroom at approximately 19:19. The crew of Engine 15 encountered smoke and stopped to don their SCBA facepieces after entering the showroom. Captain 15 was recorded transmitting on his portable radio, through an SCBA, at 19:21:21 hours. Firefighter 15B reported that the smoke was so thick that he could not locate the other members of his crew after going outside to obtain a hose line.

The Assistant Chief had donned an SCBA backpack after his first trip into the showroom. He recalled entering the showroom on multiple occasions, but did not recall using air from his SCBA[21]. He met the crew of Engine 19 as they were entering and directed them to the area where the interior lines had been deployed. He recalled that the crew members from Engine 19 were not using their SCBAs at that time. Engine 19 reported on the scene at 19:20:08 and the crew members probably entered the main showroom at 19:21 or 19:22 hours.

The crew of Engine 6 reported heavy smoke and zero visibility in the showroom when they entered at approximately 19:23 hours. They noted that there was a clear area just inside the front doors, but the smoke was banked down to the floor beyond that point.

All of the observations are consistent with smoke entering or banking down into the main showroom at approximately 19:22 hours. This suggests that the interstitial space above the ceiling had filled with smoke by that time and the smoke began to bank down into the showroom. A rapid change in smoke conditions could have been caused by circumstances that allowed more air to reach the fire, such as a partial collapse of the loading dock roof.

[21] The radio recordings captured three transmissions from Car 2 at 19:23 and 19:24 hours in which it sounds like he is using an SCBA. He did not recall using air from his SCBA.

The surviving firefighters also reported that the atmosphere became hotter with the passage of time and as they penetrated deeper into the showroom. The temperature above the ceiling was increasing as the fire progressed. The firefighters were probably encountering a combination of radiant heat from above and a convective flow of the hot gases in the upper part of the showroom.

Firefighter 15B reported that he began to operate the booster line while he was somewhere in the main showroom. He stated that he was enveloped in smoke and could feel the increasing temperature. He began to flow water when he saw a red glow in the direction of the ceiling. It was not possible to determine if he actually observed flames at the ceiling level or through a ceiling vent. The glow might have been produced by the overhead lights or some other source that was obscured by the smoke.

Conditions inside the West Showroom

The sequence of events suggest that conditions in the rear part of the west showroom changed, either gradually or suddenly, and that all of the firefighters who were operating in that area abandoned their hose lines and began searching for ways out of the building. It is impossible to determine the exact sequence of events that occurred, although the critical time was close to 19:27. The radio transmissions from firefighters in distress began at 19:27 and continued until approximately 19:35. Engineer 6 encountered the three lost firefighters in the rear section of the middle showroom at approximately 19:30.

The showrooms had filled with smoke approximately 5 minutes before the situation became critical. During that period, the firefighters were operating in near-zero visibility conditions and encountering increasing temperatures. A sudden change of conditions could have been caused by the collapse of a section of the ceiling in the rear portion of the main showroom; this event would have suddenly released a large quantity of superheated fire gases from the interstitial void space down into the showroom, subjecting firefighters to intense heat and causing the contents of the showroom to become involved in the fire. The ceiling failure could have been precipitated by the ignition of gases in the void spaces or by mechanical failure of the ceiling support system.

It is also possible that a rapid acceleration of the fire, caused by the ignition of fire gases and flammable vapors in the loading dock or a change in the air flow to the fire, could have pushed the fire through the double doors and overwhelmed the rear part of the west showroom. The rapid fire growth would have forced the firefighters to abandon their positions.

Engineer 10, who was operating his apparatus on the west side of the building, reported that he observed the eruption of a fireball from the southeast quadrant of the loading dock, near the point where the connecting corridor met the warehouse. This eruption was followed by a puff of dark smoke pushing out from the void space above the west showroom. Numerous one gallon containers of flammable liquids were stored in the area where the fireball was observed. Engineer 10 was the only firefighter who reported this observation and he could not pinpoint the time when it occurred.

A series of photographs taken on the west side of the building begins at approximately 19:23 hours[22]. These photographs show heavy smoke and flames at the roof level, above the west showroom, extending toward the front of the building. Subsequent photos and videos show smoke issuing from below the roof along the west side of the building. The photos establish that the fire had extended into the void space above the west showroom at that time; however, there is no evidence to make a determination if there was fire in this space earlier than 19:23.

Photo 9: Fire visible from the roof of the retail area. This photo was taken at 19:23:16. (Photo courtesy of Dan Folk)

[22] The referenced photos are the earliest series showing the west side of the building that were obtained during the investigation. Several photographers provided images that were taken during the following minutes.

Photo 10: Fire visible from the roof of the retail area. This photo was taken at 19:23:46. (Photo courtesy of Dan Folk

Photo 11: Fire Visible from the roof of the retail area. This photo was taken at 19:24:07. (Photo courtesy of Dan Folk)

Interior Hose Lines

After the fire, both of the hose lines that had been stretched to the rear of the showrooms from Engine 11 (one 1-1/2 inch and one 2-1/2 inch) were found on the floor of the west showroom near the double doors. The position of the 2-1/2 inch line suggests that water never flowed from the nozzle[23].

Three different individuals were reported to have operated a 1-1/2 inch hose line in the vicinity of the rear part of the west showroom, although there was only one 1-1/2 inch line inside the showroom buildings during that time period. This leads to the conclusion that they each had the same line at a different time. The crew of Ladder 5 initially operated this line inside the loading dock. Firefighter 15A found the nozzle on the floor at around 19:28 or 19:29 and attempted to pull it free. The firefighters who had been operating the line had obviously abandoned it and left the area before Firefighter 15A arrived. He subsequently abandoned the nozzle due to the increasing temperature and his inability to untangle the hose.

Captain 6 found the 1-1/2 inch nozzle on the floor shortly after Firefighter 15A had abandoned it. Captain 6 flowed water for two or three minutes before the line lost pressure and finally abandoned it at approximately 19:33 hours. The location where Captain 6 abandoned the 1-1/2 inch nozzle was in the immediate area where the deceased firefighters had been operating and within a few feet of the 2-1/2 inch nozzle.

Path of Fire through the Showrooms

Witness observations, photographs, videos, and examination of the fire debris all indicate that the fire advanced very rapidly through the main showroom, from the rear to the front, shortly after the windows at the front of the building were broken. The rate of fire growth was limited by the air supply (ventilation controlled) as long as the windows were in place. When the windows were broken, the fresh air supply allowed the fire to grow and progressively ignite the contents of the showroom. The fire then advanced across the front of the building into the west showroom.

There is ample evidence that breaking the windows provided air to the fire and accelerated the ignition of the showroom contents. The windows were broken at approximately 19:35 and the interior of the main showroom became fully involved within three to four minutes.

[23] At 19:26:17, Engineer 16 radioed Engineer 11 to advise that he was charging the supply line. At 19:29:02 Engineer 11 transmitted a message indicating that ”water’s coming right now,” which suggests that he was charging the 2-1/2 inch line at that time. The first radio transmissions indicating that firefighters were in distress inside the building were recorded at approximately 19:28.

Breaking the windows probably accelerated the flashover sequence that occurred in the main showroom; however there were very few options available at that time. Firefighters were lost and either out of air or running out of air inside the building. The interior was filled with heavy smoke and heat that had banked down from the ceiling to approximately six feet above the floor. If the windows had not been broken, the atmosphere probably would have become ripe for a backdraft to occur within a short time.

The most appropriate manner to release the hot smoke and fire gases from the interior of the building under these circumstances would have been vertical ventilation, but opening the roof was not a feasible option at that point in time. There were not enough fire fighting resources, firefighters or equipment, on the scene at this point to mount an effective roof operation and time was a critical factor. The roof structure was likely compromised at this point and a roof operation would have been extremely risky, if the resources had been available. Breaking the windows was the only option that could have possibly released enough smoke to allow any of the firefighters to find their way out of the building – there was no better option available once the incident had progressed to these conditions.

From the exterior, the fire appeared to advance through the main showroom from the rear to the front and then quickly spread across to the west showroom. The fire damage in the mid-section of the west showroom was less severe than the front and rear areas. This could be an indication that the fire initially entered the rear part of the west showroom from the loading dock and a second wave entered from the main showroom at the front of the building.

There was heavy fire inside the west and main showrooms, on opposite sides of the dividing wall, at approximately the same time. All three fire doors in the wall between the main and west showrooms failed to close, although the fusible links operated and caused the mechanisms to release. If the fire doors had closed, the firefighters who were in the west showroom would have been trapped in this part of the building. The only exit from the west showroom was locked and the fire doors would have come down on the hose lines, potentially interrupting the flow of water.

Two of the three fire doors that separated the east showroom from the main showroom did close. The third fire door released and closed partially, but was prevented from fully closing by a coat rack that was in its path. The fire spread to the east showroom; however, the damage in this area was considerably less severe than the other showroom areas.

Fire Extension to Warehouse

The fire extension into the warehouse created a second major fire that was at least equal in magnitude to the fire in the showroom buildings. The fire spread through the sheet metal wall that separated the loading dock from the warehouse and ignited furniture that was stored adjacent to the wall. After entering the warehouse the fire spread to the racks of furniture that filled the interior of the building.

The fire in the warehouse was first observed at approximately 19:20 hours and captured the attention of firefighters who were working in the vicinity of the loading dock. The large fire in the warehouse distracted the Fire Chief and other firefighters from observing the indications of fire extension into the void space above the west showroom. Two additional 2-1/2 inch lines (from Engine 10) were established to attempt an attack on the warehouse fire. By the time entry could be made into the warehouse, the situation was too dangerous for firefighters to conduct interior operations.

The Saint Andrews companies that were assigned to the south side of the warehouse quickly reached the same conclusion. A thermal imaging camera that was taken inside the warehouse from the entrance near Pebble Road showed the fire was advancing quickly from north to south and was beyond the ability of firefighters to control. A defensive strategy was implemented to protect the residential exposures.

Analysis of Fire Department Operations

Incident Management

The analysis of operations conducted at the scene of the Sofa Super Store fire begins with an examination of the organization that was established and the procedures that were implemented to direct and coordinate the efforts of firefighters.

Incident Commander

The Incident Commander is the individual with overall responsibility for directing operations. The identity of the Incident Commander may change as the operation is conducted; however, there is always one (and only one) individual in overall command of the incident at any point in time.

The essential responsibilities of an Incident Commander are listed in NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program,* and include:

(1) Arrive on-scene before assuming command

(2) Assume and confirm command of an incident and take an effective command position

(3) Perform situation evaluation that includes risk assessment

(4) Initiate, maintain, and control incident communications

(5) Develop an overall strategy and an Incident Action Plan (IAP) and assign companies and members consistent with the standard operating procedures

(6) Initiate an accountability and inventory worksheet

(7) Develop an effective incident organization by managing resources, maintaining an effective span of control, and maintaining direct supervision over the entire incident, and designate supervisors in charge of specific areas or functions

(8) Review, evaluate, and revise the incident action plan as required

(9) Continue, transfer, and terminate command

The Incident Commander is expected to evaluate and continually reevaluate the situation and to determine the appropriate strategy based on risk management considerations. The Incident Commander is also expected to assign resources and direct a coordinated fire suppression operation.

- The first arriving unit at the Sofa Super Store fire was Battalion Chief 4. He performed a rapid visual size-up of the situation on the west side of the building and directed the positioning of the first arriving engine company. He did not formally assume command and did not perform the listed functions of an Incident Commander. When the Assistant Chief arrived, less than 60 seconds behind him, Battalion 4 took a position on the west side of the fire building.

- According to Charleston Fire Department practice, the Assistant Chief became the Incident Commander upon arrival, by virtue of his rank. He did not formally assume command of the incident or establish a fixed command post. He spoke briefly to Battalion 4 near the northwest corner of the fire building and then went inside the building to perform personal reconnaissance.

- The Assistant Chief supervised tactical operations at the front of the building and inside the showrooms. He reported that he entered the showroom on two or three occasions to observe the situation. He abandoned his post at the front of the building to become personally involved in the rescue of a civilian at the rear.

- According to Charleston Fire Department practice, the Fire Chief became the Incident Commander by virtue of his rank from the time of his arrival. He did not formally assume command or establish a fixed command post. He met briefly with the Assistant Chief at the northwest corner of the building, before taking personal responsibility for operations on the west side of the building. No chief took overall command of the entire incident scene. The Fire Chief operated at the tactical level, directly supervising task level work.

- The Fire Chief became directly involved in supervising tactical operations in the vicinity of the loading dock and the warehouse during the critical phase of the incident. This should not be the role of the Incident Commander. He was not in a position to view or to manage the overall incident.

- The Fire Chief and the Assistant Chief were operating independently, supervising operations in different areas. There was no effective coordination between them.

- There was no systematic size-up of the situation (360^{o} view) and no one was in a position to view the overall incident scene.

- There was no overall strategy for attacking the fire. Operations were conducted independently from two different sides of the incident.

- There was no accountability system in place to keep track of the position, function, and status of companies and members operating in different areas.

- The communications process was not controlled. The Fire Chief, the Assistant Chief, and Battalion Chief 4 were all issuing orders and providing direction independently, using a single overloaded radio channel. Critical messages, including distress message from firefighters inside of the structure, were not heard.

Strategy

The Incident Commander is responsible for determining the strategy that will be used to conduct fire fighting operations and for the formulation of a plan to implement that strategy through tactical assignments. The strategy – either offensive or defensive – defines the overall plan that will be used to attack the fire.

At the Sofa Super Store incident, the absence of an effective overall Incident Commander and an appropriate command structure resulted in the establishment of two separate operational commands. Both teams were attempting to attack the fire simultaneously, with no coordination between them.

The two groups attempted to conduct simultaneous offensive attacks into the loading dock from diagonally opposite directions. Both offensive attacks were unsuccessful and the firefighters were forced to retreat.

The firefighters who were attacking from the west side were close to an exit and were able to escape when the increasing volume of fire forced them to retreat. The fire that burned through their hose line created a heavy protective spray that allowed them to make a safe escape from an extremely dangerous situation.

The firefighters who were attempting to attack the fire from the front of the building were approximately 200 feet inside a complex building when the situation became untenable, forcing them to abandon their attack. Nine firefighters lost their lives because they were too deep inside a highly combustible smoke-filled building and could not find their way back to the entrance or locate alternative exits before they ran out of air or were overwhelmed by the fire.

The offensive strategy was appropriate during the first stage of the operation, based on the conditions that were observed. The Assistant Chief believed that the fire could be contained within the loading dock. If the offensive strategy had been successful, the incident would have had a positive outcome – the fire in the loading dock would have been suppressed and any fire extension into the adjacent areas would have been stopped before it could spread.

The initial evaluation of fire conditions was based on incomplete and partially erroneous information. The Assistant Chief believed that the walls between the loading dock and the showrooms were brick construction and that the fire could be stopped at the double doorway. He was unaware of the unprotected opening from the loading dock into the holding room, as well as the direct exposure of the warehouse to the loading dock.

At a critical point, the fire fighting strategy should have changed from offensive to defensive and the firefighters operating inside the showrooms should have been withdrawn. The decision to withdraw the interior companies should have been based on several factors:

- The fire in the loading dock was not controlled;
- Companies were operating deep inside a building with only one identified exit;
- The interior of the building was difficult to navigate and contained a very high fire load;
- The interior of the building had filled with smoke, reducing visibility to zero;
- No ventilation actions had been initiated to relieve the smoke condition;
- The companies that were working inside the showroom had only one operating hose line with a very limited water flow capability;
- The engine company that was supplying that line did not have a continuous water supply;
- A larger hose line had been stretched and positioned to back-up the first line; however the line could not be charged since a water supply had not been established to Engine 11 and only tank water was available at this point;
- There was visual evidence (that was not observed by any fire officer or firefighter) that the fire had extended into the void space directly above the area where the firefighters were operating;

- There was no Rapid Intervention Team in place and no back-up resources were available at the fire scene. Resources were committed to tactical operations as quickly as they arrived.

The decision to switch from offensive to defensive strategy should have been made early enough to allow the firefighters who were operating inside the showrooms to withdraw safely. This critical decision was not made, because there was no effective Incident Commander coordinating the operation, continually revaluating the situation, and providing overall direction.

The Fire Chief made a tactical-level decision to switch to a defensive strategy on the west side of the fire, when he directed the firefighters from Engine 10 to hold their position at the doorway and not attempt to reenter the loading dock with their hose line. The firefighters who were operating inside the showrooms probably could have escaped safely if the same decision had been made at a strategic level (for the entire incident), and implemented through an appropriate incident command structure.

Risk Management

Risk management is the fundamental factor that must be considered in determining the appropriate strategy for each situation. The determination of the appropriate strategy provides the basis for planning, organizing and conducting the overall operation. The cornerstone considerations for risk management are incorporated into the *Ten Rules of Engagement for Structural Firefighting*, published by the International Association of Fire Chiefs.

RISK ASSESSMENT

IT IS THE RESPONSIBILITY OF THE INCIDENT COMMANDER TO EVALUATE THE LEVEL OF RISK IN EVERY SITUATION. THIS RISK EVALUATION SHALL INCLUDE AN ASSESSMENT OF THE PRESENCE, SURVIVABILITY AND POTENTIAL TO RESCUE OCCUPANTS. WHEN THERE IS NO POTENTIAL TO SAVE LIVES, FIREFIGHTERS SHALL NOT BE COMMITTED TO OPERATIONS THAT PRESENT AN ELEVATED LEVEL OF RISK.

AN INCIDENT COMMAND SYSTEM SHALL BE ESTABLISHED, BEGINNING WITH THE ARRIVAL OF THE FIRST FIRE DEPARTMENT MEMBER AT THE SCENE OF EVERY INCIDENT. THE INCIDENT COMMANDER MUST CONDUCT AN INITIAL RISK ANALYSIS TO CONSIDER THE RISK TO FIREFIGHTERS IN ORDER TO DETERMINE THE STRATEGY AND TACTICS THAT WILL BE EMPLOYED.

THE RESPONSIBILITY FOR RISK ASSESSMENT IS A CONTINUOUS PROCESS FOR THE ENTIRE DURATION OF EVERY INCIDENT. THE INCIDENT COMMANDER SHALL CONTINUALLY REEVALUATE CONDITIONS TO DETERMINE IF THE LEVEL OF RISK HAS CHANGED AND A CHANGE IN STRATEGY OR TACTICS IS NECESSARY. THE INCIDENT COMMANDER SHALL ASSIGN ONE OR MORE SAFETY OFFICERS TO MONITOR AND EVALUATE CONDITIONS TO SUPPORT THIS RISK ANALYSIS.

AT A MINIMUM THE RISK ANALYSIS FOR A STRUCTURE FIRE SHALL CONSIDER:

- BUILDING CHARACTERISTICS
  - CONSTRUCTION TYPE AND SIZE
  - STRUCTURAL CONDITION
  - OCCUPANCY AND CONTENTS

- FIRE FACTORS
  - LOCATION AND EXTENT OF THE FIRE
  - ESTIMATED TIME OF INVOLVEMENT
  - WHAT ARE THE SMOKE CONDITIONS TELLING US?

- RISK TO BUILDING OCCUPANTS
  - KNOWN OR PROBABLE OCCUPANTS
  - OCCUPANT SURVIVAL ASSESSMENT

- FIRE FIGHTING CAPABILITIES
  - AVAILABLE RESOURCES
    OPERATIONAL CAPABILITIES AND LIMITATIONS

TEN RULES OF ENGAGEMENT FOR STRUCTURAL FIRE FIGHTING

ACCEPTABILITY OF RISK:

1. No building or property is worth the life of a fire fighter
2. All interior fire fighting 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 property
5. Fire fighters shall not be committed to interior offensive fire fighting operations in abandoned or derelict buildings.

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 duration of every incident
4. If conditions change and risk increases, change strategy and tactics.
5. No building or property is worth the life of a fire fighter.

RISK ASSESSMENT RULES OF ENGAGEMENT

FIRE FIGHTER INJURY/LIFE SAFETY RISK	HIGH PROBABILITY OF SUCCESS	MARGINAL PROBABILITY OF SUCCESS	LOW PROBABILITY OF SUCCESS
Low	Initiate Offensive operations. Continue to monitor risk factors.	Initiate Offensive operations. Continue to monitor risk factors.	Initiate Offensive operations. Continue to monitor risk factors.
Medium	Initiate Offensive operations. Continue to monitor risk factors. Employ all available risk control options.	Initiate Offensive operations. Continue to monitor risk factors. Be prepared to go defensive if risk increases.	Do not initiate offensive operations. Reduce risk to fire fighters and actively pursue risk control options.
High	Initiate Offensive operations only with confirmation of realistic potential to save endangered lives.	Do not initiate offensive operations that will put fire fighters at risk for injury or fatality.	Initiate Defensive operations only.

The risk management guidelines are intended to assist the Incident Commander in identifying the appropriate strategy for a particular situation.

- Offensive strategy involves committing firefighters to conduct an interior fire attack. The objective of an offensive attack is to control and extinguish the fire within the area that is already burning, while preventing extension to any of the exposures.

- Defensive strategy is directed toward confining a fire within a defined area, while keeping firefighters outside and in safe operating positions.

The IAFC Acceptable Risk Guidelines would support the initiation of an offensive attack during the initial stage of the Sofa Super Store incident, if the Incident Commander believed the fire could be contained to the loading dock without exposing firefighters to excessive risk. *(This situation would be classified as **Medium Risk** and **Marginal Probability of Success**.)*

The fire that was burning in the loading dock presented a significant tactical challenge. The fire involved a relatively large space (approximately 2,200 square feet) that was filled with highly combustible contents. A successful offensive attack would have to deliver sufficient fire flow (water) to overcome the volume of fire within this space.

The situation was greatly compounded by the circumstances. Access to the fire area was difficult and the building configuration created immediate exposures on three sides. In addition to delivering a powerful attack to suppress the fire within the loading dock, the Incident Commander would have to ensure the fire did not extend into any of the exposures.

The Incident Commander was responsible for determining whether the available fire fighting resources had the ability to control and/or contain the fire and whether this action could be accomplished safely. The risk assessment should have changed as additional information was obtained and fire conditions were re-evaluated. If the Incident Commander lacked the capability to conduct a safe and effective offensive fire attack in the time that was available, the strategy should have changed to defensive.

As soon as the fire extended into the void spaces above the showrooms, the situation exceeded the capability of the Charleston Fire Department to control the fire with an offensive strategy. Multiple large hose lines would have been required to stop the spread of hot fire gases within the void spaces. The hose lines would have to be operated by crews operating inside the showrooms and opening ceilings to attack the fire. This attack would have to be coordinated with vertical ventilation, opening holes in the roof to release the trapped smoke and fire gases. The Charleston Fire Department did not have the resources, training, or leadership that would have been required to conduct an operation of this size and complexity in the limited time that was available.

A risk management analysis at that point would have determined that attempting to conduct an interior offensive fire attack under these circumstances placed firefighters in conditions of unacceptable risk. *(The risk analysis would classify this situation as **High Risk** and **Low Probability of Success**.)* The revised risk analysis would dictate a switch to defensive strategy and the withdrawal of all firefighters from interior positions.

Fire Fighting Tactics

The offensive attack into the loading dock area was unsuccessful for three primary reasons:

1. The attack was attempted with hose lines that were inadequate for the size of the space and the volume of fire;

2. The offensive attack was not supported by vertical ventilation;

3. The fire extended into the exposures on three sides of the loading dock.

Two 1-1/2 inch preconnected hose lines were advanced into the loading dock, one by Ladder 5 from the showroom and one by Engine 10 from the exterior. Each attack line was configured to flow 60 gallons per minute, even though the nozzles had higher available settings. The combined flow of 120 gallons per minute was insufficient to control a fire in an area of more than 2,200 square feet that was loaded with highly combustible furniture.

The additional 2-1/2 inch hose line that was advanced through the showroom by Engine 16 would have increased the total flow to approximately 376 gallons per minute. This line was never operated due to the water supply deficiency. If this line had been charged, the resulting flow rate probably would have been insufficient to control the volume of fire in the loading dock. The most commonly used fire flow formula used in the United States is the one developed by the National Fire Academy. Using this formula (square feet divided by 3 equals necessary fire flow) at least 733 gallons per minute would have been required to suppress the fire within the loading dock.

The two 1-1/2 inch attack lines were advanced into the loading dock from opposing directions by Ladder 5 through the double doors and by Engine 10 from the exterior. The line operated by Ladder 5 may have contributed to the deteriorating conditions that caused the Engine 10 crew to begin backing out however, this is unlikely. When the limited flows are compared with the volume of fire in the loading dock, the opposing hose lines probably had very little influence on each other[24].

Neither line was positioned to prevent the fire from extending into the holding room, which was the most vulnerable direction for fire extension. The fire was probably extending into the holding room before the interior attack was initiated.

No horizontal or vertical ventilation measures were initiated to support the offensive attack. Vertical ventilation was needed to release the hot fire gases that were trapped inside the building and spreading throughout the void spaces. The ladder company, which would normally be expected to provide ventilation, was operating one of the hose lines.

No ceilings were opened in the showrooms to check for fire extension into the void spaces. The thermal imaging camera from Ladder 5 was not brought into the building. The thermal imaging camera would have allowed firefighters to scan the ceilings for indications of fire in the void spaces and also might have helped them find their way out of the smoke-filled building.

When the fire extended into the warehouse at the rear of the property, two additional 2-1/2 inch hand lines were deployed to initiate an additional offensive attack into the much larger space. The two additional lines overwhelmed the water supply that was available to Engine 10, resulting in reduced flows to all of the lines that were operating on the west side of the fire. The flow from the two lines had no impact on the volume of fire inside the large warehouse.

[24] Captain 10 reported that he sensed the presence of a second line inside the loading dock, but was driven out by the increasing intensity of the fire and the rupture of the hose line.

Situational Awareness

The Incident Commander has the ultimate responsibility for making the determination when strategy should be changed and firefighters should be withdrawn from interior positions. This requires the Incident Commander to maintain situational awareness at all times. At a large scale incident, where it is impossible to monitor the overall situation from one vantage point, the Incident Commander has to establish an appropriate command structure and rely on subordinate officers to provide progress and condition reports from different perspectives.

At the Sofa Super Store incident, the Fire Chief and the Assistant Chief were operating independently. Neither command officer was aware that the situation inside the showrooms had changed and the risk factors had become critical. The factors that should have caused them to switch to a defensive strategy were not recognized and the critical information was not communicated.

The Assistant Chief neither conducted an overall size-up when he arrived on the scene nor assumed an effective command position that would have allowed him to observe the overall situation and manage resource. He went inside the building to personally evaluate conditions and became personally involved in tactical operations. His attention was focused on one side of the fire.

When the Fire Chief became the Incident Commander, the Assistant Chief became responsible for supervising operations at the front of the building and inside the showrooms. At that point he should have been closely monitoring conditions inside the building - either directly or by continually communicating with company officers who were inside the showroom. He also should have been managing and keeping track of the companies that were operating inside the building. He should have known where the interior companies were operating and what they were doing. When the interior began filling with smoke and the temperature began increasing significantly, he should have directed those companies to withdraw and immediately advised the Incident Commander, recommending a change in strategy.

When the trapped civilian was reported, the Assistant Chief left his position at the front of the building and went around to the rear to personally supervise the rescue operation. He only became aware of the changing conditions inside the showrooms when he returned to the front door after the civilian had been rescued. The situation inside the building had changed radically during his absence.

The Fire Chief became the Incident Commander within the first 8 minutes of the incident. He had a brief view of the front of the building when he arrived and conferred with the Assistant Chief before assigning himself to direct tactical operations on the west side of the fire.

The Fire Chief should have established a command post in a location that allowed him to view the overall situation and direct operations at a strategic level[25]. An exterior Command Post position would have allowed him to assemble information from officers assigned to supervise tactical operations in different areas and provide direction to them. The Fire Chief's position on the west side of the building, directly in front of the loading dock, afforded a very limited view of the fire scene and he became preoccupied with supervising tactical operations within that limited area.

The Fire Chief's attention was initially focused on attacking the fire in the loading dock. The subsequent extension of the fire into the warehouse captured his attention for several minutes while he directed companies to set-up for an offensive attack into that building[26]. He then became distracted by water supply issues involving Engine 10 and Engine 12, and later with providing a water supply for Ladder 5. (Ladder 5 was being set-up on the west side of the building.)

The Fire Chief did not become aware of the critical situation occurring inside the showrooms until off-duty Battalion Chief 303 arrived on the scene and told him what he had heard on the radio. He did not have overall situational awareness and had assumed that the Assistant Chief was conducting a successful operation to keep the fire from extending into the showrooms.

Miscommunication between the Fire Chief and the Assistant Chief contributed to the lack of situational awareness. At 19:23:09 the Fire Chief asked. "Alright, Larry, how we looking inside the store?" and the Assistant Chief replied, "I'm trying to get back to it now." This message was interpreted as *"We're getting to it now,"* which caused the Fire Chief to believe that the risk of fire extension into the showrooms had been alleviated.

[25] The usual location for a fixed command post would be "Side A" – directly in front of the building. Because the fire was on the west side at the rear of the building and the parapet blocked the view from Side A, a more appropriate location for a fixed command post would have been northwest of the building. If the Command Post had been established directly in front of the building, an officer could have been assigned to observe operations from the northwest position and keep the Incident Commander updated.

[26] Once the fire entered the warehouse, that building and its contents were essentially lost. Several firefighters, who could have performed more critical tasks, were assigned to force entry and to prepare hose streams to attempt an interior (offensive) attack into the warehouse. From the outset, a defensive strategy was appropriate for the warehouse.

Pre-fire Plan

The Charleston Fire Department routinely conducts pre-fire planning visits at properties that were considered to be high fire risks. Pre-fire planning serves two major purposes:

- Pre-fire planning visits make firefighters aware of the general arrangement and specific details of properties where they may have to fight a fire or conduct other emergency operations.

- Pre-fire plans (information gathered during pre-fire planning visits) can provide valuable information that will assist a command officer in managing an incident at a specific property. This information is particularly valuable when the property is large and complex or when an incident could involve unusual risks or hazards to firefighters.

In addition to the familiarization and planning aspects of pre-fire planning, the process of visiting properties and gathering information often identifies fire hazards, unusual risks and situations that require special attention. The appropriate action can vary from providing information or recommendations to the business or property owner to referring a situation for follow-up by code enforcement personnel.

The most recent pre-fire planning visit to the Sofa Super Store property had been conducted on April 26, 2006 by crews from Fire Station 11. An information form was filled-out and a sketch of the building layout was placed in the file. (A copy of the pre-fire plan is provided on the following pages.).

The sketch provided a very rough floor plan of the showroom buildings, but did not include any details of the warehouse, loading dock or other spaces that were located behind the three showroom buildings. The critical details of the connections between the loading dock and the showrooms were not documented.

Knowledge of the building construction and arrangement would have allowed the Incident Commander to recognize the risk of fire extension in multiple directions and to identify key points to attempt to stop the fire. This information could have been provided by a more detailed pre-fire plan.

A complete pre-fire plan would have allowed the command officers to recognize the risk of fire extension from the loading dock into the west and main showroom buildings, as well as the warehouse. The presence of a lightweight steel truss roof over the main showroom also should have been noted.

The command officers at the scene of the fire did not have access to the limited pre-fire plan information that had been obtained or to any other information about the building:

- They were not aware of the complex building configuration;
- They did not know the specific locations where a fire could easily extend from the loading dock into the adjacent areas;
- They did not know which walls were fire walls.

A detailed pre-fire plan would have provided information on the building construction and arrangement, contents, access points, exposures, hydrant locations, available flows, and other factors that could have been extremely valuable in managing the incident.

City of Charleston Fire Department
PRE-PLANNING BUILDING INSPECTIONS

Capt. F. Cockcroft.
Capt. G. Gardner.

Company Eng 11, Eng 10 & L5 **Date** 04/26/06 **Officer** Asst Capt. L. Garvin.
Address 1807 Savannah Hwy.
Occupant Sofa Super Store.
Owner Herb Goldstein.
Emergency # (Key Holder) Jerry Gilford. 559-9951 Weston Wilson 769-6637
Lives Involved: Day 15-18. **Night** 0
Type of Building Metal, Block **No. Floors** 1
Type of Roof Comp. **Construction** Metal Block.
F.D. Connections N/A **Standpipes** N/A
Auto Sprinkler N/A **Location Main Valve** N/A
Fire Alarm Indicator N/A
Location Main Elec. Switch Left Rear of Building
Location Main Gas Shut-Off Right Rear of Building.
Stairways N/A
Elevators N/A
Fire Escapes N/A **Scuttle Holes** N/A
Vertical Openings ~~N/A~~ 7. **Hallways** 1
Fire Doors 11 **Exits** 8
Best Way To Enter Building: Day Front. **Night** Front.
Hydrant Location Pebble ct. Sasah Rd,
Contents House hold furniture + office Equipment

Exposures to be Covered Texaco gas Station + Car dealerships.
Date of Last Extinguisher Recharged May 2006.
CO2 _____ **Dry Chemical** ✓
Additional Comments and/or Concerns Warehouse in rear Isles Racks
Approx. 30' ~~high~~ high.

Figure 16: Pre-fire plan information sheet, completed April 26, 2006.

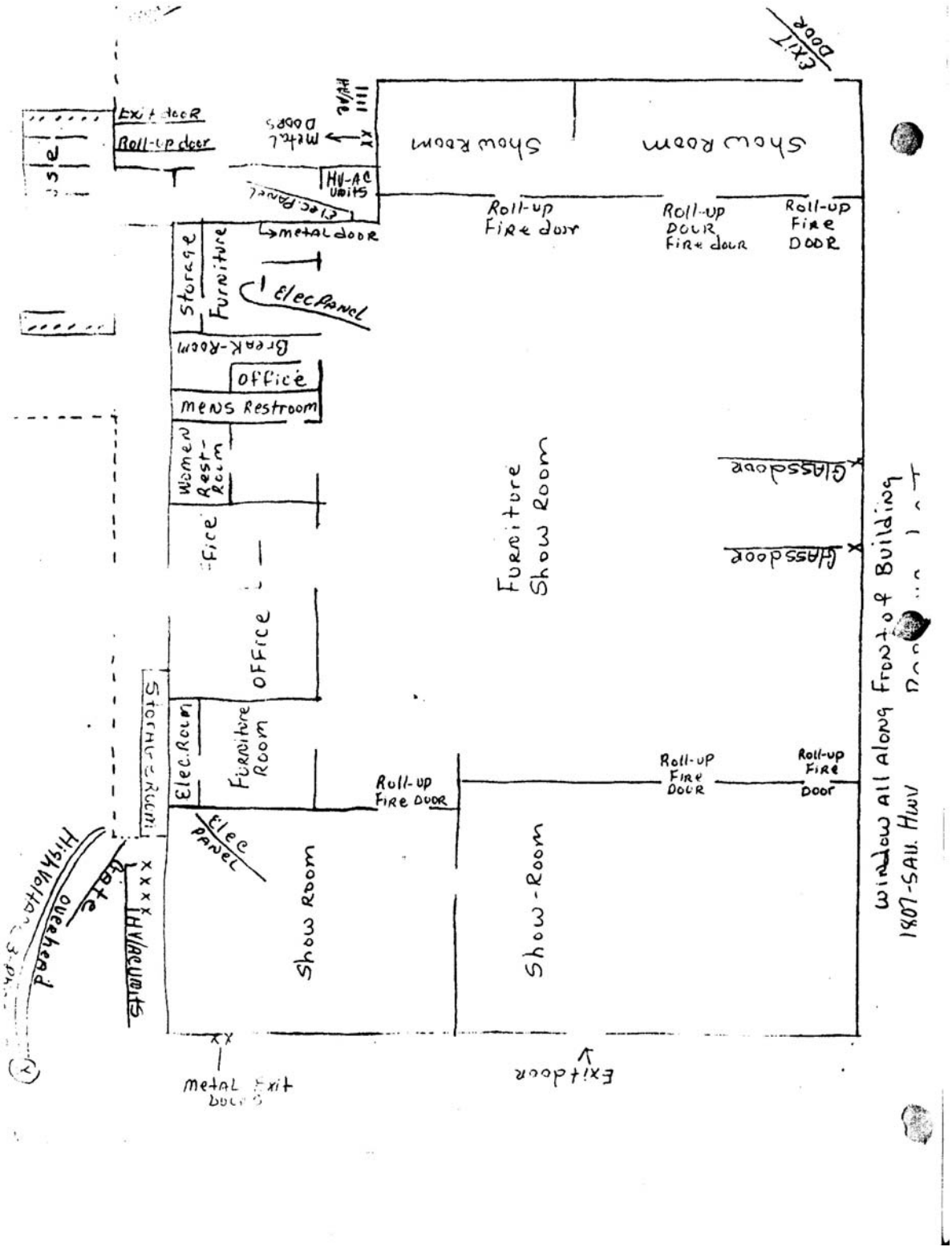

Figure 17: Pre-fire plan sketch.

The Charleston Fire Department members assigned to the incident had varying degrees of familiarity with the Sofa Super Store. Most of the firefighters who were assigned to companies in the West Ashley area were generally familiar with the Sofa Super Store and recognized the potential for a major fire at that location. In addition to conducting pre-fire planning visits, several of the firefighters had shopped in the store; others had picked-up discarded furniture from the area where the fire originated for use in training exercises.

The Assistant Chief shopped for furniture in the store during the week before the fire and was familiar with the showroom layout. In an interview conducted during the investigation he stated that he would not have committed firefighters to fight a fire in the showrooms, based on their size, arrangement, and fuel load. He also stated that he did not observe indications of fire or heavy smoke inside the showrooms until after the civilian rescue was accomplished.

None of the firefighters interviewed during the investigation were familiar with the complex arrangement of the buildings at the rear of the property or the construction details.

Communications

Communications problems and deficiencies played a very significant role in the Sofa Super Store fire. Both operational and technological communications problems were encountered. The single radio channel used during the fire was severely overloaded and the communications process was not controlled at the command level.

The recorded radio traffic includes numerous messages that were either missed or misunderstood due to the volume of traffic and the lack of control over the communication process. The most critical messages that were not successfully communicated were the transmissions from firefighters who were in distress inside the building.

All three command officers on the scene during the early stages of the incident issued instructions over the radio to companies that were enroute or as they arrived. The instructions to companies were very brief, such as “Come to the front door and get me a 2½ and bring the 2½ in here” or “I want you to come on and park your truck in the middle of the street on Savannah Highway and come in the front door.” In most cases the response to an assignment was either “copy” or “10-4” and several instructions were not acknowledged. Some of the assignments changed before the company arrived on the scene.

Company officers interviewed after the incident indicated they had a general notion of what the chiefs wanted them to do, or at least where to go, with the overall understanding that the plan was to go inside the building and attack the fire. In most cases the companies determined the specific action to be taken based on their on their own perceptions of the situation.

The Charleston Fire Department operates on an 800 MHz analog trunked radio system that is shared with the Charleston Police Department. The radio system provides several optional talk groups for Fire Department use; however all of the radio traffic relating to the Sofa Super Store incident was conducted on “Fire 1” which is also used as the primary dispatch channel[27]. The single talk group was severely overloaded with the heavy radio traffic that was generated by the incident. Additional information about the Charleston Fire Department communications system is provided in Appendix E.

The Department’s operational policy at the time of the incident left the decision to the Incident Commander to determine if and when tactical communications for an incident should be switched to a different talk group. The Incident Commander could have directed the dispatcher to move the incident to an alternative talk group.

[27] NFPA 1561 requires ”one radio channel for dispatch and a separate tactical channel to be used initially at the incident” [6.1.1]

The Incident Commander also had the option of activating a local repeater system that allowed portable radios at an incident scene to communicate in simplex mode, while relaying their communications to the trunked system through a vehicle mounted repeater. Mobile repeaters were mounted in the Assistant Chief's vehicle and in the Battalion Chiefs' vehicles.

The mobile repeater had been found particularly valuable when companies were operating inside large buildings and had difficulty maintaining contact with the trunked system. The trunked system operates from a single radio tower that is located in Mount Pleasant, approximately 8 miles from the fire scene, and it was not unusual for the signal from low-power portable radios to have difficulty reaching the tower.

The portable radios also had "private call" capability which allowed two units to communicate directly through the trunked system. Private call messages were not recorded and could not be monitored by anyone else.

All radio traffic on fire department talk groups is recorded at the Communications Center. The recordings indicate that there was heavy traffic on "Fire 1" throughout most of the incident. The radio traffic during the critical period jumped back and forth from one subject to another, with numerous interruptions and incomplete exchanges[28]. The recorded radio traffic during this period included requests for additional companies to respond, dispatch instructions, companies relocating to cover different areas, instructions for companies arriving on the scene, requests for hose lines to be charged, and requests for additional pressure in supply lines.

Many messages and fragments of messages that were not heard at the time were captured by the recording system and deciphered through repeated playbacks during the investigation[29]. All of the transmissions from firefighters inside the building indicating that they were in distress are included among the messages that were not heard or understood at the time of the incident. A detailed transcription of incident radio traffic is contained in Appendix B.

[28] NFPA 1500 identifies the responsibility of the Incident Commander to "Initiate, maintain, and control incident communications" [8.1.8 (4)]

[29] Several individuals who were monitoring the incident on fire station radios and scanners reported hearing transmissions that were not recorded. A technological analysis of the radio and recording systems indicates that this is unlikely to occur while the trunked radio system is in operation. See Appendix E.

Tactical Communications

Most of the recorded radio traffic involved the dispatchers, command officers, units en route to the incident, and apparatus operators. There was very little radio communication involving the members who were conducting interior fire fighting operations, other than the fragmented distress messages. No progress or condition reports were transmitted by company officers during the period of offensive interior operations. The command officers who were on the scene did not transmit any specific instructions to the companies inside the building or request any progress reports from them.

Discussions with Charleston Fire Department members indicate that company officers and firefighters were not in the habit of using their portable radios for tactical communications while conducting interior operations. The portable radios were normally carried in an external pouch attached to the firefighter's turnout coat; most radios were not provided with extension microphones and speakers. Several members indicated that they usually could not hear their radios when they were working inside buildings and tended not to use them.

Mayday Communications

A portable radio was provided for each on-duty member and several off-duty members also had "take-home" portables. One of the primary reasons for providing portable radios for all firefighters was to provide a means to call for assistance if a member was in distress. The portable radios were equipped with emergency buttons that transmitted a digital identifier signal to the Communications Center. The Charleston Fire Department had also adopted a standard operating procedure establishing the use of the term "MAYDAY" for a firefighter in need of assistance.

Eight of the nine deceased members had their assigned portable radios with them. (The radio assigned to Captain 5 remained in the apparatus.) The first message indicating that a firefighter was in distress was recorded at 19:27 hours. Fragmented communications from lost and disoriented firefighters continued for approximately 7 minutes, until 19:34. The recording system captured at least 16 such messages or fragments of messages.

The radio messages indicating that firefighters were in distress were not heard by anyone at the incident scene, although some of those messages were heard by other companies in fire stations and by individuals monitoring the incident on scanners. The term "Mayday" was recorded only one time.

Several factors contributed to the failure to hear or understand the messages from firefighters in distress:

- Heavy radio traffic pertaining to several different subjects, including the rescue of the Sofa Super Store employee from the rear of the building that occurred during the same time period;

- Ambient noise at the fire scene;

- Absence of a fixed Command Post;

- Utilization of low power portable radios on a trunked radio system with za single reception tower.

No one at the incident scene was specifically assigned to monitor the tactical radio channel to listen for indications of problems, including mayday messages. This duty should be routinely assigned within the command structure when firefighters are conducting interior fire fighting operations.

The critical radio traffic coincides with the period when the rescue of the store employee was occurring at the rear of the building. During this period, while firefighters were attempting to call for assistance, the following radio traffic was recorded:

- Car 1 called for more pressure in the supply line from Engine 12 to Engine 10;
- Car 1 called for Engine 3 to respond to the fire scene and lay a line to Ladder 5; (Ladder 5 was being set-up by off-duty firefighters on the west side of the building.)
- Car 2 called for manpower to assist with the civilian rescue operation
- Car 5 reported that the trapped employee had been rescued
- Car 2 called for EMS to respond for the rescued employee
- Engineer 11 advised that he was charging the 2-1/2 inch line
- Engineer 16 called for traffic control on Savannah Highway because cars were still running over the supply line.

The two dispatchers who were on-duty in the Communications Center were also exceptionally busy during this period. They heard fragments of messages, but did not initially recognize that firefighters were calling for assistance. In addition to monitoring the radio traffic, they were occupied with requesting an ambulance from Charleston County EMS and answering a rapid succession of telephone calls. A Battalion Chief monitoring the incident at his station called at 19:31:40 and told a dispatcher that he had heard radio traffic indicating that a firefighter had lost connection with the hose line and was lost.

The only individual who understood and reacted to the urgent radio messages was an off-duty Battalion Chief (Car 303) who was en route to the scene in his privately owned vehicle and heard the radio traffic on his portable radio. He attempted to contact the Fire Chief by radio at 19:30:27 to relay the information, but was unable to reach him. He drove to the scene as quickly as possible and relayed the information in person to the Fire Chief at approximately19:33. His face-to-face report to the Fire Chief was the first recognition at the fire scene that firefighters were in trouble inside the building.

Analysis of the recorded radio traffic indicates that the deceased members did not attempt to call for assistance until they were in critical distress. All of the recorded messages indicate that the firefighters are lost, disoriented, and either running out of air or already out of air. The firefighters were already in imminent danger, deep inside the building, when they began to call for assistance.

All of the “firefighter in distress” messages came from the radios assigned to the deceased members. The recording system did not capture any distress messages from the surviving members who were operating inside the building. Seven surviving members were inside the smoke-filled showroom and had lost contact with their company officers or other crew members[30]. At least two of the surviving firefighters were either out of air or very close to running out of air. None of them used their radios to report they were in distress or request assistance.

These observations are similar to the behavior of firefighters in several other incidents where fire departments had not adopted very specific “Mayday” procedures and conducted extensive training in their application. Experience suggests that firefighters tend to wait until they are in dire distress before requesting assistance. Realistic training based on specific criteria and procedures tends to make firefighters more comfortable initiating a “Mayday” while there is still time for a Rapid Intervention Team to take action.

The Charleston Fire Department Standard Operating Procedures included the use of the term “Mayday” to indicate that a firefighter is in distress. The SOP indicated that a firefighter should call “Mayday” and describe the situation as well as possible so that the Incident Commander could determine the best action. The procedure did not describe specific situations when a Mayday should be called and did not specify additional actions that should be taken by the member calling a Mayday, by the Incident Commander, by Communications Center personnel, or by a Rapid Intervention Team.

[30] Captain 6, Engineer 6, Firefighter 6, Firefighter 11, Engineer 15, Firefighter 15A and Firefighter 15B.

The single use of the term “Mayday” was recorded at 19:32:15. The “Mayday” was not heard by the Incident Commander or by anyone else at the fire scene. The Communications Center immediately notified the Incident Commander when a firefighter’s emergency button was activated at 19:34:40.

FIREFIGHTER SAFETY

Safety Officer

There was no designated Safety Officer at the scene of the Sofa Super Store fire. The role of an Incident Safety Officer had not been integrated into the Charleston Fire Department's standard operating procedures and no members had been trained to perform this role. A properly trained Safety Officer would likely have recognized that the situation had evolved to a point where the firefighters inside the building should have been withdrawn and the incident strategy should have switched to defensive.

Respiratory Protection

Autopsy reports indicate that all of the firefighters who died in the Sofa Super Store had inhaled smoke and superheated gases. Their deaths were caused by a combination of smoke inhalation and thermal burns. All of the firefighters were wearing self-contained breathing apparatus and had either run out of air, or encountered overwhelming fire conditions that compromised the integrity of their breathing apparatus.

At the time of the Sofa Super Store incident, the Charleston Fire Department used low pressure (2216 psi) self-contained breathing apparatus rated for a nominal 30 minutes of use. One SCBA was provided for each riding position, with additional units carried on ladder companies and reserve apparatus. Each apparatus carried one spare air cylinder for each assigned SCBA. All of the SCBA units were of similar design and were manufactured by the same supplier, although at least four different models of different vintage were in use.

The typical experience of firefighters using 30-minute rated SCBA units, while performing structural fire fighting operations, suggests that a full cylinder will provide approximately 14 to 16 minutes of operational time[31]. The low pressure alarm is required to activate at between 20 and 25% of the full cylinder pressure, which generally provides 3 to 4 minutes of warning time before a cylinder is exhausted.

The operational policy of the Charleston Fire Department at the time of the incident was to refill air cylinders that were at or below 1500 psi. Under this policy an SCBA that was carried on apparatus was considered "ready for use" with

[31] The rated duration of an SCBA is based on an average flow of 40 l/min. Firefighters engaged in high exertion activities are estimated to consume air at an average rate of 80 l/min and a maximum rate of 100 l/min. A 30-minute rated cylinder contains approximately 1200 liters of usable air. This volume of air would be consumed in 15 minutes at a flow rate of 80 l/min.

anywhere between 1500 and 2216 psi in the cylinder[32]. This policy conflicts with specific requirements of NFPA Standard 1500 and the OSHA Respiratory protection standard[33].

The refill policy had the impact of potentially reducing the service time of an SCBA by approximately one-third; a cylinder that was charged to 1500 psi could be expected to provide only 10 minutes of operating time and the low pressure alarm would begin to activate after only 6 to 7 minutes of use.

The following table indicates the estimated times that the air supply for each firefighter working inside the building would have been exhausted, based on a minimum duration of 10 minutes[34] and a maximum duration of 16 minutes:

	ESTIMATED START TIME	EARLIEST (+10 MINUTES)	LATEST (+16 MINUTES)	EXIT TIME
Ladder 5				
Captain	19:16	19:26	19:32	
Engineer	19:16	19:26	19:32	
Firefighter	19:16	19:26	19:32	
Engine 16				
Captain	19:19	19:29	19:35	
Firefighter	19:19	19:29	19:35	
Engine 15				
Captain	19:20	19:30	19:36	
Firefighter A	19:20	19:30	19:36	19:33
Firefighter B	19:20	19:30	19:36	19:35
Engineer	19:22	19:32	19:38	19:35*
Engine 19				
Captain	19:22	19:32	19:38	
Engineer	19:22	19:32	19:38	
Firefighter	19:22	19:32	19:38	
Engine 6				
Captain	19:23	19:33	19:39	19:35
Firefighter	19:23	19:33	19:39	19:35
Engineer	19:24	19:34	19:40	19:35

* Changed cylinder

[32] An informal survey of Charleston Fire Department apparatus in fire stations found many SCBAs with cylinders in the 1700 to 1800 psi range and some that were below 1600 psi.

[33] **NFPA Standard 1500**

7.14.3 In-service SCBA cylinders shall be stored fully charged.

OSHA Respiratory Protection Standard 29 CFR 1910.134(h)(3)(iii)

...Air and oxygen cylinders shall be maintained in a fully charged state and shall be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level....

[34] 10 minutes duration assumes an air utilization rate of 80L/min with a starting cylinder pressure of 1500 psi.

The first firefighters observed using breathing apparatus were Captain 10 and Firefighter 10 who entered the loading dock from the west side at approximately 19:14 hours. They exited before their air supplies were exhausted.

The first firefighters who entered through the showrooms to begin using SCBA were the three crew members from Ladder 5. They advanced the1-1/2 inch handline from Engine 11 into the loading dock through the double doors at approximately 19:16 hours. The low pressure alarms for the three crew members from Ladder 5 probably activated somewhere between 19:22 and 19:29 hours and their air supplies probably would have been exhausted between 19:26 and 19:32 hours.

Captain 16 and Firefighter 16 are believed to have donned their SCBA facepieces at approximately 19:19 hours, based on reports of increasing smoke conditions inside the store.

Captain 15, Firefighter 15A and Firefighter 15B are believed to have donned their SCBA facepieces at approximately 19:20 hours, based on their entry time. Engineer 15 was probably 2 minutes behind the other members of his crew entering the building. Firefighter 15A had exhausted his air supply when he exited at 19:33. He had been using his SCBA for approximately 13 minutes.

Captain 19, Engineer 19 and Firefighter 19 are believed to have donned their SCBA facepieces at approximately 19:22 hours, based on their entry time.

Captain 6 and Firefighter 6 are believed to have donned their SCBA facepieces at approximately 19:23 hours, based on their entry time. Engineer 6 entered approximately one minute behind the other members of his crew. Engineer 6 had approximately 600 psi remaining in his SCBA when he left the building at 19:35 hours, after using air for approximately 11 minutes. Captain 6 had run out of air when he exited at 19:35, approximately 12 minutes after he entered the showroom.

The analysis of air supplies and work duration is consistent with the finding that all of the deceased firefighters inhaled lethal or potentially lethal concentrations of carbon monoxide and other fire gases. This is also consistent with the reports provided by survivors who encountered members who were lost and disoriented and appeared to be out of air. The evidence indicates that all of the deceased firefighters ran out of air while they were inside the Sofa Super Store and were unable to find their way outside.

The key factors that must be recognized are:

1) the extreme danger of becoming disoriented in a smoke-filled building; and

2) the time it can take to exit from a work area deep inside a smoke-filled building.

The area where the crews were operating was approximately 200 feet inside the showroom from the front entrance. The entire showroom was filled with smoke and the path back to the front entrance was a series of narrow aisles among the furniture displays. The only guide available to the firefighters was to follow the hose lines back toward the entrance; they had to feel their way along the hose lines which included loops and turns and had become entangled with the furniture.

If the firefighters waited until the low pressure alarms on their SCBA activated, they would have had only 3 to 4 minutes to find an exit from the depths of the Sofa Super Store before their air supplies were exhausted. A firefighter who was disoriented or had lost contact with the hose line would have been unlikely to find a way out of the building within the limited available time.

Air Management Program

The concept of **air management** has been widely discussed recently, based on the investigation of firefighter fatalities that involved running out of air in an IDLH[35] atmosphere. One of the causal factors in several of these fatalities was excessive reliance on the low pressure alarm to warn the firefighter when it is time to leave the IDLH atmosphere.

The accepted SCBA use policy in the Charleston Fire Department (and in many other fire departments) at the time of the Sofa Super Store incident was to work until the low pressure alarm sounded and then exit the building to obtain a replacement cylinder. The air management concept requires a fire department to train members to continually monitor and manage their air supplies so that they will be able to leave the IDLH atmosphere before the low pressure alarm is activated. This policy is now incorporated within NFPA 1404 – Standard for Fire Service Respiratory Protection Training.

[35] IDLH refers to an atmosphere that is Immediately Dangerous to Life and Health. By definition, interior fire fighting operations are considered to be conducted under IDLH conditions by definition.

Reference:

NFPA 1404 - Standard for Fire Service Respiratory Protection Training - 2006 edition
5.1.4 The AHJ shall establish and enforce written standard operating procedures for training in the use of respiratory protection equipment that shall include the following:
(2)* **Individual air management program**
A.5.1.4(2) This program will develop the ability of an individual to manage his or her air consumption as part of a team during a work period. This can require team members to rotate positions of heavy work to light work so air consumption is equalized among team members. The individual air management program should include the following directives:
(1) Exit from an IDLH atmosphere should be before consumption of reserve air supply begins.
(2) Low air alarm is notification that the individual is consuming the reserve air supply.
(3) Activation of the reserve air alarm is an immediate action item for the individual and the team.

The NFPA standard for self-contained breathing apparatus (NFPA 1981, Standard for Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services) has been revised to require a heads-up display that provides a continual indication of the remaining air supply and begins to warn the user when the air supply reaches 50% of the rated capacity of the SCBA.

One of the firefighters who operated inside the smoke-filled showroom was working his first shift as a Charleston firefighter. He reported that he could not locate his Captain or any other members of his company after he was sent outside to obtain a hose line. He remained inside the showroom and operated the hose line in the direction of a red glow (which he believed was the fire) until he became concerned about his air supply. He followed his hose line and escaped from the building shortly before the situation became critical. This individual reported that he was unfamiliar with the model of self-contained breathing apparatus assigned to him that day and did not understand the meaning of the “heads-up display” inside his face piece.

Rapid Intervention Team

The Charleston Fire Department did not have an established policy to apply the “2-in/2-out” rule for the initial phase of interior fire fighting operations nor to assign Rapid Intervention Teams during fire incidents[36]. The OSHA Respiratory Protection Standard (29CFR1910.134) and NFPA 1500 Section 8.5 both require the assignment of at least one Rapid Intervention Team (or crew) whenever firefighters are operating in an IDLH environment.

[36] Specific requirements for assigning Rapid Intervention Teams are documented in OSHA 1910.134 (g) (3) and (4), and in NFPA 1500, sections 8.5 and 8.8.

At the Sofa Super Store incident, companies were operating in IDLH conditions deep inside a building with only one identified entrance/exit. There was no Rapid Intervention Team standing by outside the IDLH area.

A "standby" company was routinely dispatched to working fires in Charleston; however this company was generally given the next tactical assignment, as opposed to standing by to rescue firefighters in distress. In many cases, a succession of companies were called to standby at an incident and each company was quickly assigned to perform a task. At the Sofa Super Store fire, six additional engine companies were requested in rapid succession and each of those companies (Engines 16, 12, 19, 15, 6 and 3) was given an assignment prior to arrival. In addition, three companies from the Saint Andrews Fire Department arrived and quickly initiated operations. During this period there was never a standby company at the scene.

The primary duty of a Rapid Intervention Team is to be prepared to assist firefighters who are in distress inside a building or within an IDLH atmosphere. At least one RIT should have been available outside the Sofa Super Store to respond immediately when the first report of firefighters in trouble was transmitted; additional resources should have been mobilized as soon as the RIT was activated.

When the size and configuration of the Sofa Super Store are considered, as well as the fact that companies were entering the building from two remote locations, a minimum of two RIT company assignments would have been appropriate. One RIT should have been assigned to the front of the building; the second should have been assigned to the west side.

It is important to recognize the limitations of a Rapid Intervention Team. Rapid intervention procedures are generally directed toward providing the ability to locate and rescue a single firefighter. It is highly unlikely that a single RIT could have entered the showroom, located, and then rescued the number of firefighters who were in distress deep inside the smoke-filled building[37].

Accountability and Crew Integrity

At the time of the Sofa Super Store incident, the Charleston Fire Department had not adopted a personnel accountability system to keep track of individual firefighters, companies, or crews that were operating on the scene of an incident. The Department did not make use of status boards, tactical worksheets, accountability tracking devices or personnel accountability reports (PAR). Command officers relied on memory to keep track of company locations and assignments.

[37] Kreis, Steve. *Rapid Intervention Isn't Rapid*, Fire Engineering, December 2003, pp. 56-66.

The Charleston Fire Department did not utilize multiple alarm assignments, grouped resources, or staging. Companies that responded after the initial alarm were requested and dispatched individually and were given assignments enroute or as they arrived. There was no fixed Command Post at the Sofa Super Store incident and no tracking of resources as they were assigned. The six additional engine companies that were dispatched during the first 20 minutes of the incident all went directly to work without reporting to a command officer.

The accountability problem was compounded by an absence of crew integrity policies and procedures. The Department did not enforce a policy that required members to work in teams of 2 or more, or to maintain company integrity while working in IDLH environments. The OSHA Respiratory Protection Standard and NFPA 1500 both explicitly require firefighters operating in IDLH conditions to work in teams of 2 or more and to maintain contact among team members. Each entry team is required to maintain communications with someone outside the IDLH area.

Charleston Fire Department members routinely entered and operated in IDLH atmospheres alone. In many cases the company officer operated a hose line while the other crew members operated semi-independently. Company officers frequently lost track of their assigned crew members. Firefighters who lost track of their assigned company officers took direction from any other officer who was present or became involved in whatever task caught their attention. Members who had expended their air supplies went outside individually, obtained replacement SCBA cylinders, and returned to conduct interior operations.

Interviews with members of the Charleston Fire Department suggest this was the routine mode of operation. Several of the surviving members reported that they lost contact with their officers and other company members inside the smoke-filled building. The firefighters did not consider these situations unusual; they all continued to operate under these conditions until their low air pressure alarms activated. None of them attempted to use their portable radios to report that they were lost or in distress.

The routine and institutionalized practice of off-duty firefighters showing up at working fires, and spontaneously volunteering to assist, further complicated the accountability problem. It was not uncommon for several off-duty members to show up at a fire scene and become involved in tactical operations. Several members had been issued portable radios and carried protective clothing in their personal vehicles to facilitate off-duty response. A written policy requiring off-duty members to report-in to the officer in command of an incident was often overlooked.

The magnitude of the Sofa Super Store incident prompted a large number of off-duty members to respond and provide assistance, even before it became known that firefighters were missing. Some of the firefighters arrived with their protective clothing: others borrowed protective clothing from members who were operating apparatus or working outside the fire perimeter, and still others went to work wearing street clothes.

Several off-duty members of both the Charleston and Saint Andrews Fire Departments can be seen in photographs and videos that were taken while the operation was still in the offensive phase, although none of them were involved in interior fire fighting operations. Off-duty members relocated and set-up Ladder 5 for elevated master stream operations on the west side of the building while the assigned crew members were operating inside the building.

The situation became chaotic after the firefighters were reported to be missing. Dozens of firefighters from Charleston and neighboring fire departments responded and became involved in the operation. Command officers from mutual aid departments responded to the scene to offer assistance or assigned units to cover Charleston fire stations. Members of volunteer departments, some of whom were off-duty Charleston firefighters, arrived with additional apparatus.

TACTICAL OPERATIONS

Water Supply

Water supply issues played a very significant role at the Sofa Super Store fire and contributed to the loss of the nine firefighters.

The established practice in the Charleston Fire Department called for the first arriving engine company at a structure fire to position close to the fire scene and begin the attack using water from the on-board tank. The second arriving engine company would prepare to lay a supply line from the attack engine to a hydrant. In many cases the second engine would back into position near the first engine and stand-by to lay a supply line, if needed.

In most cases a fire attack was initiated using 1-inch booster lines, with 1-1/2 inch preconnected lines as an option. The second engine was required to lay a supply line and hook-up to a hydrant if the first engine used most of its tank water or if a 1-1/2 inch line was operated.

The Charleston Fire Department did not use large diameter hose for supply lines; the standard hose load on engine companies provided only a single bed of 2-1/2 inch hose that could be used as a supply line. This arrangement severely limited the volume of water that was available for fire attack.

The standard attack lines were configured to deliver very limited flows. The nozzles on the 1-1/2 inch preconnected lines were set to deliver 60 gallons per minute. The nozzle operator had the option of resetting the nozzle to a higher flow, if necessary, and advising the pump operator to increase the pressure to provide the higher flow rate[38]. Larger (2-1/2 inch) attack lines were rarely used inside structures. Engine companies were not equipped with pre-piped master stream devices.

Lack of Coordination

The standard operating procedure was not followed during the early stage of the Sofa Super Store incident. Both of the first alarm engines initiated interior fire attack operations using water from their tanks, with no additional engines on the scene to lay supply lines for them. This situation occurred due to an unusual set of circumstances and a lack of coordination at the command level.

- The confusion began when Engine 11 initially went to the rear of the property. This caused Engine 10 to arrive first at the front of the property and become the attack engine - the Assistant Chief directed Engine 10 to back down the driveway to attack the fire[39].

- When they arrived at the front of the building, Captain 11 told his engineer and firefighter that they would be laying a supply line to Engine 10. Captain 11 then went inside the store, while Firefighter 11 started out on foot toward a hydrant.

- The plan was disrupted when Captain 11 called for a 1-1/2 inch line to be brought into the showroom. This message was transmitted just after Ladder 5 arrived at the front of the building. Captain 5 could see Engine 11 at the front of the building, while Engine 10 was in the driveway and out of sight. Captain 5 had also heard the Assistant Chief call for Engine 12 to respond, followed by Battalion Chief 4 directing Engine 12 to lay a line to Engine 10.

- Captain 5 redirected Engineer 11 to position his apparatus near the front door. The crew of Ladder 5 then advanced the preconnected line from Engine 11 into the showroom.

[38] There were no requests to increase the flows in the two lines that were operated inside the loading dock at the Sofa Super Store.
[39] Engineer 10 stated that he expected to find Engine 11 at the end of the driveway and was surprised when he realized that Engine 10 had become the attack engine.

Conducting an offensive fire attack with two engines supplying the attack lines with tank water and no supply lines connected to hydrants is a very high risk situation under any circumstances. The risk was even greater when the particular circumstances of the Sofa Super Store are considered – a very large building with a heavy fuel load requiring firefighters to operate deep inside the structure.

- **Engine 10** briefly supplied a one-inch booster line, before the 1-1/2 inch attack line was charged. From that point, the smaller line was used intermittently as other firefighters arrived in the area. With a combined flow of 100 gpm, the 750 gallon tank could supply the two lines for 7 minutes and 30 seconds. The first line began flowing water at approximately 19:14 and the supply line from Engine 12 was charged at 19:20. If the 1-1/2 inch line had not ruptured, the tank would have been close to empty before the supply line was charged.

- **Engine 11** was operating two lines from the onboard tank. The 1-1/2 inch line began flowing 60 gallons per minute at approximately 19:17 hours. The flow increased to 100 gallons per minute when the booster line began operating at approximately 19:25. At this flow rate, the 750 gallon tank would have been exhausted at approximately 19:27. The supply line from Engine 16 to Engine 11 was charged at 19:26.

Supply Lines

The single 2-1/2 inch supply lines that were established for Engines 10 and 11 were incapable of providing the flows that those engines were attempting to deliver to attack lines. This resulted in compromised and/or interrupted flows in all of the attack lines that were operating during the most critical stage of the incident.

Engine 10 was initially pumping a booster line and one 1-1/2 inch line, with a combined flow of 100 gallons per minute. When the fire spread to the warehouse, two 2-1/2 inch lines with 1” smooth bore nozzles were deployed. A total flow of 612 gallons per minute would have been required to operate all four lines, based on Charleston Fire Department standard operating procedures.

Engine 12 supplied water to Engine 10 through a single 2-1/2” line, 850 feet in length. The pressure in the supply line was increased on multiple occasions in response to requests from senior officers. Calculations indicate that maximum practical flow through this line would have been approximately 325 gallons per minute[40].

[40] See calculations in appendix

Engine 11 was pumping a 1-1/2 inch line and a booster line with a combined flow of 100 gallons per minute. The 2-1/2 inch line, which was not charged until the supply line was charged, increased the demand to 356 gallons per minute.

Engine 16 supplied water to Engine 11 through a supply line that was comprised of 1750 feet of 2-1/2 inch hose and 100 feet of 3-inch hose. Calculations indicate the maximum practical flow through this line would have been approximately 240 gallons per minute[41].

The supply line from Engine 16 to Engine 11 was pumped at more than 250 psi at the supply end; however, photographs that were taken shortly after it was charged show that the hose was limp and there were multiple kinks near the delivery end[42].

Photo 12: The scene at the front of the store at 19:31:23. Note the lack of pressure evidenced by the kinks in the supply line feeding Engine 11. (Photo courtesy Charleston Post and Courier)

[41] See calculations in appendix

[42] The photographs indicate that five lengths of 2-1/2 inch hose were flaked out on the ground next to Engine 11, adding 250 feet of unneeded hose and six kinks to the to the supply line. The extra hose significantly increased the friction loss in the supply line and restricted the volume of water that could be delivered to Engine 11. It was not determined who pulled the additional hose from the bed of Engine 16. It was presumably a well-intentioned effort of someone who anticipated that the line was going to be advanced into the Sofa Super Store.

Senior officers attempted to compensate for the inadequate supply lines by repeatedly calling for “more pressure” from the pumpers that were connected to hydrants. The preoccupation with water supply problems distracted the command officers from effectively managing the overall incident. The friction loss calculations demonstrate that the 2-1/2 inch supply lines were incapable of delivering the desired flows and the problem could only be solved by stretching additional supply lines – preferably using large diameter hose.

During later stages of the incident several master streams were set-up and the resulting demand exceeded the volume available from the water mains and hydrants in the West Ashley area. The hydrants were capable of supplying all of the attack lines that were deployed during the first 30 minutes, if appropriate supply lines had been established.

Delay in Charging Lines

Delays were encountered in charging both of the hose lines that were taken through the showrooms to attack the fire in the loading dock. The delays and subsequent flow interruptions placed crews in extremely dangerous situations inside the building.

- The 1-1/2 inch attack line that was taken into the fire building by the crew of Ladder 5 was in position for at least two minutes before it was charged. This delay occurred because Engineer 11 was unfamiliar with an idiosyncrasy of the apparatus and was unable to engage the pump.

- The 2-1/2 inch line that was stretched by Engine 16 was in position inside the building for approximately 10 minutes before it was charged. The delay in charging the attack line was caused by the delay in charging the supply line from Engine 16 to Engine 11[43].

- The attack line was found in the area in front of the double doors, where Captain 16 and Firefighter 16 had been waiting for the line to be charged. The position of the hose and the nozzle found after the fire suggest that the 2-1/2 inch line had not been operated. The line was probably abandoned before it was charged.

Several other problems and interruptions in water flow were reported. The problems began during the early stages of the incident and increased as the incident grew in magnitude and complexity. The water problems became even more severe when the showrooms and the warehouse became involved and the demand for additional hose lines increased in proportion to the magnitude of the fire.

[43] Engineer 16 performed commendably in his single-handed effort to provide a supply line for Engine 11.

Most of the water problems were related to inadequate supply lines and inexperienced pump operators. The single 2-1/2 inch supply lines that were used by the Charleston Fire Department could not deliver the flows that were required to conduct an effective fire attack, even if fire hydrants had been closer to the scene.

The engineers who were operating Engines 10 and 11 both stated that their supply lines were pulsating and attributed this condition to cars driving over the lines. Witnesses suggested that both pumps were cavitating due to inadequate flows in their supply lines[44].

- When the 2-1/2 inch line was charged, Engineer 11 momentarily throttled-down the engine in order to switch the pump over from pressure to volume mode (series to parallel). He had been instructed to change over when the flow exceeded 50% of the pump's capacity and he believed that he had reached that point[45].

- Captain 6 reported that the flow in the 1-1/2 inch line was interrupted after he had been operating the nozzle for 2 or 3 minutes. The flow interruption may have coincided with the changeover from pressure to volume or it could have resulted from inadequate water supply to Engine 11.

Lack of Truck Work

The standard tactical functions that are commonly classified as "truck work" were not performed at the Sofa Super Store incident. These functions include raising portable and aerial apparatus ladders, performing vertical and horizontal ventilation, forcible entry, opening walls and ceilings, and performing search and rescue operations. The single ladder company that was assigned on the first alarm at this incident advanced a hose line and functioned as an engine company.

The lack of truck work appears to have been a common situation in the Charleston Fire Department. The Department operated ladder company apparatus, but the crews assigned to those vehicles generally did not perform ladder company functions ("truck work"). Several members noted that vertical ventilation was rarely, if ever, performed at structure fires.

[44] Engines 10 and 11 were both operated by recently promoted Assistant Engineers who had very little experience pumping at fires. They were called upon to operate unfamiliar apparatus under extremely stressful conditions.

[45] Engine 11 is a 1500 gpm pumper. The maximum flow, with the 2-1/2 inch line charged, would have been approximately 350 gpm. The supply line from Engine 16 to Engine 11 was incapable of delivering more than 250 gpm

Inadequate Company Staffing and Initial Response

The minimum recommended staffing level for engine and ladder companies in career fire departments is four crew members per vehicle[46]. The operational policy of the Charleston Fire Department at the time of the Sofa Super Store incident was to assign four crew members to each company on each shift; however, companies routinely operated with only three members on duty. All three companies that were initially dispatched to the Sofa Super Store were operating with three crew members and only two of the first nine companies were staffed with four members.

The inadequate company level staffing meant that each individual unit was operating with limited capabilities and could not be expected to perform as an efficient and effective company at a working structure fire. The inadequate company staffing compromised the effectiveness of the overall operation.

In addition to inadequate company staffing, the standard response to a reported structure fire did not provide sufficient resources to conduct a safe and effective offensive fire attack in a large commercial building. The initial dispatch provided only 10 firefighters, including one command officer. Although additional companies were quickly requested and dispatched, the response was fragmented and the offensive attack was clearly disorganized.

Traffic Control

Savannah Highway and Wappoo Road are heavily traveled streets under normal circumstances. The large column of smoke generated by the fire drew spectators on foot and by car. Cars drove over the uncharged and charged supply lines laid by Engine 12 and Engine 16.

Engineer 12 called dispatch to request Police Department assistance with civilians driving over his supply line to Engine 10 at 19:20:55 and Engineer 16 called dispatch with a similar complaint at 19:31:28 and 19:43:49.

Although law enforcement officers arrived on the scene fairly quickly, it took some time to gain control of traffic in the area.

Protective Clothing and Equipment

All of the personal protective clothing and equipment that was worn by the deceased firefighters was damaged by the fire. The items that could be recovered were preserved for detailed examination during the investigation. All of the deceased firefighters were wearing structural fire fighting coats and trousers, with either rubber or leather fire fighting boots, as well as gloves and helmets.

[46] The recommended minimum company staffing levels are described in NFPA 1710.

Many of the firefighters were found to be wearing protective hoods. All of the items that could be closely examined were determined to comply with the appropriate NFPA standards. At least one firefighter wore a protective clothing ensemble that had not been provided by the Charleston Fire Department, although the protective clothing was NFPA compliant.

All of the firefighters utilized Scott Airpak 50 Self-Contained Breathing Apparatus (SCBA). Each SCBA was equipped with a composite air cylinder that was designed, when full, to contain 45 cubic feet of air at 2,216 psi. All nine firefighters were found with their SCBA backframe and air cylinder in place or nearby. All components of each SCBA sustained severe thermal damage.

Different versions of the Airpak 50 were in use by the deceased firefighters. All SCBA units were equipped with the Vibra-alert low air alarm and some were recent versions that also included heads up displays and low air alarm bells. Some of the SCBA facepieces were found with the regulator in place while others were too severely damaged to make a determination.

The Personal Alert Safety System (PASS) device used by the Charleston Fire Department at the time of the fire was a Grace Industries Superpass. The device was worn on the SCBA waist belt. The PASS was activated by the removal of a "key" that detached from the device as it was removed from the apparatus-mounted SCBA bracket. The "key" was tethered to the bracket by a small piece of rope so the removal of the "key" and activation of the PASS were automatic.

With the exception of Captain 5, each firefighter was equipped with a portable radio. At least two firefighters had clip microphones and one firefighter utilized a radio pouch and strap.

The firefighters were found to be wearing station uniform shirts and trousers that were made of 100 percent polyester. These uniforms did not comply with the NFPA standard for such items. In several cases the uniform items had melted due to direct or indirect thermal exposure. The melting of the uniform items was likely not a factor in the deaths of the firefighters.

CONCLUSIONS, LESSONS, AND RECOMMENDATIONS

KEY FACTORS IDENTIFIED IN THE ANALYSIS

The analysis of the Sofa Super Store Incident is divided into two primary sections;

1. Factors relating to the building and the property where the fire occurred

2. Factors relating to the operations that were conducted by the Charleston Fire Department

The key factors within each area are summarized in the following statements. These summaries represent the most significant factors in the collective opinion of the Review Team members and are intended to focus attention on the points that should have had the greatest impact on preventing future fire fighter fatalities.

Building and Property

The Sofa Super Store was a high risk occupancy that presented several specific risks to the health and safety of firefighters. The fire risk factors that were found in this occupancy also presented risks to the employees, customers, neighbors, and the surrounding community. The level of fire risk exceeded the limits prescribed by established regulations and would have - or should have - been mitigated if the applicable codes and standards had been followed, applied, and enforced.

The fire could have been prevented. If the property had been constructed and maintained in accordance with state and local codes the fire would have been quickly controlled: no lives would have been lost and the fire would have been of little consequence.

- The fire would not have occurred if the combustible materials had not been stored in proximity to a smoking area or of smoking had been prohibited in that area.

- The fire would have been quickly controlled with minor damage if a sprinkler system had been installed.

- A sprinkler system would have been required if the building owner had obtained permits for the loading dock and other “fill-in” construction projects[47].

[47] The Building Code would have required the installation of a sprinkler system unless the property could be divided into compartments by a system of fire walls. If the fire walls had been constructed the fire would likely not have extended beyond the loading dock.

- The fire would not have spread to the showroom areas or the warehouse if the loading dock enclosure had not been constructed.

- The fire would have been less severe if flammable liquids had not been improperly stored in the loading dock.

- The firefighters might have been able to find their way out of the building if the required exits had been properly maintained.

- The code violations would have been discovered if the City of Charleston had conducted regular fire inspections and if firefighters had been trained to identify code violations during pre-fire planning visits and report them to the Inspections Department.

Fire Department Operations

The fire suppression operations that were conducted by the Charleston Fire Department at the Sofa Super Store did not comply with federal occupational health and safety regulations, with NFPA consensus standards, or with modern fire service expectations. These deviations from standard operational and safety practices exposed firefighters to excessive risks and failed to remove the nine deceased firefighters from a critically dangerous situation.

The predominant factor identified in the analysis of Fire Department operations is the failure to manage the incident according to accepted practices. There was no structured incident command system in place and the essential duties of an Incident Commander were not performed. The operation was conducted in an unstructured and uncoordinated manner, without overall direction and with inadequate supervision.

The Charleston Fire Department was inadequately staffed, inadequately trained, insufficiently equipped, and organizationally unprepared to conduct an operation of this complexity in a large commercial occupancy. The Department attempted to compensate for the limited resources and organizational inadequacies by engaging in dangerously aggressive and uncoordinated fire fighting operations. This placed the firefighters deep inside a large building without the systems that should have been in place to ensure their safety and to provide for the removal of all firefighters when the situation became critical.

The Charleston Fire Department took pride in conducting aggressive interior fire attack using small hose lines with very limited water flows. The organizational culture emphasized fast attack and independent action. The Department operated with a “default offensive strategy” based on a general expectation that firefighters could go inside and conduct an aggressive offensive attack that would control <u>almost</u> any fire they were likely to encounter.

This highly aggressive interior attack approach is appropriate for many situations and was effective in controlling a large percentage of the fires the Charleston Fire Department had encountered over the years, particularly in residential occupancies. The offensive attack orientation was not balanced by alternative strategies that would have been more appropriate for a major fire in a large and complicated commercial occupancy.

The Sofa Super Store fire required a very different combination of strategy and tactics. The volume of fire could not be controlled by the limited flow from small hose lines. Firefighters were operating deep inside the building without the capability to control the fire and without the support systems that should have been in place to protect them. The strategy and tactics attempted by Department members were inappropriate for the situation and exposed the firefighters to extreme and unnecessary risks.

Several additional contributing factors were identified in the analysis of operations. Each of these factors played a part in the tragedy that occurred and all of them are interrelated. The report attempts to place these contributory factors and interrelationships in an appropriate context.

It is almost inevitable that the detailed investigation of a complex incident will reveal a number of errors and performance problems. Fire fighting is not an exact science and it is unrealistic to expect that every firefighter will perform flawlessly in every situation. Fire fighting is inherently dangerous and firefighters are human beings who can make mistakes. The final analysis of this incident does not suggest that any of the firefighters who lost their lives, or any of the surviving members of the Charleston Fire Department, failed to perform their duties as they had been trained or as expected by their organization. The analysis indicates that the Charleston Fire Department failed to adequately prepare its members for the situation they encountered at the Sofa Super Store Fire.

Lessons and Recommendations

LESSONS

One of the primary objectives of the detailed investigation of the Sofa Super Store incident is to identify the lessons that should be taken from this very sad experience and applied to prevent future tragedies. While it is impossible to change events that have already occurred, it is essential to learn from those experiences in order to prevent the same circumstances and outcomes from repeating themselves in Charleston or in any other community

Every investigation of this type produces valuable information. The circumstances of firefighter fatalities are often complicated and invariably involve a sequence of interrelated events that produce an unplanned, unintended, and undesirable outcome. Fire fighting involves inherent dangers and hazardous situations that must be anticipated, recognized, evaluated, and properly managed to produce positive outcomes. The mission of a fire department is to protect lives and property from those hazards and firefighters must be prepared to perform their duties in the face of those inherent risks. The health and safety of firefighters are directly related to the ability of the fire department to skillfully and effectively perform every aspect of that mission.

The following section of the report presents a compilation of lessons and recommendations that should be taken from the Sofa Super Store incident and implemented by the Charleston Fire Department.

Unfortunately, as in many other cases, the lessons do not provide new insight or information and the recommendations are not revolutionary. The situation that occurred in Charleston on June 18, 2007 was predictable and the outcome was preventable. All of the lessons and recommendations listed below are restatements of lessons that have been identified in previous investigations involving other fire departments and recommendations that have been widely adopted as standard practices within the fire service.

The loss of nine firefighters is a sad and very significant occurrence within the fire service – on the local level in Charleston and for the fire service as a whole. The gravity of this experience should inspire renewed emphasis on learning the lessons and fully implementing the recommendations contained in this report, so that some degree of a positive outcome may result from this tragic event.

Incident Management

The Sofa Super Store incident clearly demonstrates the critical importance of a comprehensive Incident Management System (IMS) to provide command, control, and coordination of emergency operations. The IMS should be fully incorporated into the basic operational processes of the Charleston Fire Department and routinely applied to every emergency incident and training exercise to provide the appropriate structure for conducting operations. The application of IMS is absolutely essential in situations that involve complex problems and exceptionally hazardous circumstances, as occurred at the Sofa Super Store incident.

Since the Sofa Super Store incident, the Charleston Fire Department has provided its members at all levels with basic incident management training. The training that has been provided is a first step in the process of fully implementing and integrating IMS into the Department's standard operating procedures.

The key concepts of Incident Management that must be fully integrated into the operations of the Charleston Fire Department include:

- A clearly identified Incident Commander, performing a standard set of functions within a well-defined system.
- Establishment of a fixed Command Post in a location that allows the Incident Commander to view the overall incident scene.
- Delegation of authority and responsibility to subordinate officers with pre-defined roles within a standard structure.
- Determination of an overall strategy for the incident, based on an appropriate size-up.
- The application of accepted risk management principles at the start of the incident and continually thereafter, at all levels.
- Translation of the strategy into an incident action plan and specific tactical assignments.
- Management and allocation of resources to accomplish the tactical assignments
- Continual reevaluation of the situation, based on observation, reconnaissance, information gathering, effective communications and situational awareness.

- Assignment of one or more designated safety officers, functioning within the command structure.

- Maintenance of control over the incident communications process.

- Continual systematic accountability for the location, function, and status of all firefighters and all other persons operating within hazardous areas at the incident scene.

- Standard procedures to ensure that a single IMS structure is implemented at incidents involving resources from multiple jurisdictions, including Unified Command where appropriate.

Risk Management

The fundamental concepts of operational risk management must be understood at every level within the Charleston Fire Department and applied to every situation. The level of acceptable risk must be weighed against and justified by the realistic benefits that can be obtained.

Strategy and Tactics

The determination of the appropriate strategy – either offensive or defensive – is the key factor that controls firefighter safety. The determination of appropriate strategy must be based on an appropriate size-up of the situation, a realistic evaluation of the resources and capabilities that are available to conduct operations and the application of risk management principles.

Offensive strategy can only be effective when the fire department has the capability to conduct an interior attack that delivers a sufficient quantity of extinguishing agent by firefighters to suppress the fire. Attempting an offensive attack without the resources that are required to suppress the fire places firefighters in needless jeopardy. If an offensive attack cannot be accomplished safely and effectively with the resources at hand, it should not be attempted. The Incident Commander is directly responsible for making that determination.

An incident action plan for a fire fighting operation is implemented through the coordinated application of fire fighting tactics. A successful offensive strategy requires effective action at the tactical level and coordination among actions. If the Incident Commander lacks the resources to execute the plan or the tactics are not adequately executed and coordinated, the operation cannot be accomplished safely or effectively.

The effectiveness of an offensive attack must be closely monitored and evaluated to ensure that it is meeting the Incident Commander's expectations. If the attack is not effective and/or conditions change in a manner that shifts the risk management balance, the Incident Commander must reevaluate the strategy, adjust the tactics and, if necessary, change the incident action plan.

Firefighter Safety

Fire fighting operations in Charleston should be conducted in a manner that routinely incorporates all of the standard components of safe practices, including:

- The designation of **Safety Officer(s)** at all working incidents.

- **Company Integrity –** Firefighters and company officers should be trained to operate as tactical units. All company members should operate under the direct supervision of a company officer within a structured Incident Management System. The company officer must be continually aware of the location, status, and function of every member assigned to that company.

- Firefighters should be trained in and systematically apply the principles of **Crew Resource Management**.

- Firefighters operating in IDLH conditions must work in teams of 2 or more, remaining in direct contact with each other at all times. The members of each team (or full company) enter, work and leave the IDLH area together.

- Charleston must implement and utilize an **Accountability System** to track the entry and exit of members from the IDLH area. Personnel Accountability Reports (PAR) must be routinely employed to verify the status of operating companies or teams as they work in an IDLH area.

- **Rapid Intervention Crew(s)/Team(s)** must be assigned at all appropriate emergency incidents. These teams must be trained, equipped, and prepared to provide assistance to firefighters in distress.

- All Charleston Fire Department members must be trained in Mayday, self-rescue, and rapid intervention procedures.

- All Charleston Fire Department members must be trained to recognize hazardous conditions and situations, such as lightweight construction and unusual fire loads, and react appropriately.

- All off-duty members who respond to incidents and become involved in operations must be integrated into the IMS and accountability systems and utilize the appropriate protective clothing and equipment.

Self-Contained Breathing Apparatus

- The City of Charleston has made a significant investment in new Self-Contained Breathing Apparatus. These units need to be properly maintained and inspected by certified personnel. Each firefighter must check and test his/her assigned SCBA at the beginning of each shift and after each use. In order to provide firefighters with the highest margin of safety, SCBA cylinders must be maintained fully charged.

- The Charleston Fire Department must adopt and implement a comprehensive respiratory protection program that complies with OSHA regulations and NFPA standards.

- All Charleston Fire Department members must be trained in and routinely employ the principles of Air Management.

Radio Communications

- The Charleston Fire Department needs to continue and expand the use of tactical channels on emergency incidents. The Charleston radio system appears to have the capacity, functionality, and reliability to support effective tactical communications. The system should be assessed to ensure that it is configured to provide all members operating in IDLH areas with the ability to maintain communications with the Command Post or a designated individual outside the IDLH area.

- The available system components, including mobile repeaters, need to be used on a regular basis to ensure that effective tactical communications are established and maintained at all incidents.

- Charleston should designate an individual at the Command Post, outside the IDLH area or at the dispatch center to continually monitor the tactical radio channel used by members operating inside an IDLH area.

- All Charleston firefighters should be trained to use the “order model” to ensure that messages are clearly stated and understood.

- Charleston firefighters must be trained to continually monitor the tactical radio channel for instructions and advisories, especially when they are operating in an IDLH area.

- Charleston Fire Department dispatchers should be fully trained to function within the IMS, including application of the order model and monitoring tactical communications.

- All Charleston Fire Department company officers should be trained to provide progress, accountability (PAR), and situational awareness reports to the incident commander.

- When units from multiple agencies are involved in an incident, the communications system(s) must provide sufficient interoperability to ensure that operations are fully coordinated within an appropriate IMS structure.

- Charleston should continue discussions with other area fire departments related to improvements in dispatch and communications systems, including potential consolidation of dispatch centers and radio systems.

Training

All Charleston Fire Department members must be properly trained and qualified to perform their assigned duties, including temporary assignments. Members who are authorized to work temporarily in higher level assignments must be trained and evaluated in performing those duties. All members must be periodically reevaluated to ensure that they are capable of performing their assigned duties safely and effectively.

- The Charleston Fire Department must establish realistic training and educational requirements for all positions and ranks and a promotional process that ensures that all members demonstrate the necessary knowledge, skills, and abilities to perform their assigned duties and responsibilities.

- All Charleston Fire Department companies should be trained and periodically evaluated in performing a range of standard company functions within a system of standard operating procedures.

- Charleston Fire Department company and command officers should be trained at an appropriate level in fire fighting strategy and tactics, including the application of operational risk management principles.

- Simulation exercises should be conducted to provide experience in managing unusual, complex, and challenging situations.

Fire Department Resources

- The Charleston Fire Department must ensure that all companies are adequately staffed to perform a menu of standard company operations efficiently and effectively. Engine and ladder companies should be staffed by a minimum of four members on duty at all times. (The Department is committed to reaching this objective during 2009.)

- The Charleston Fire Department should ensure that sufficient resources are dispatched to reported structure fires to conduct operations on scale that is appropriate for the magnitude and complexity of the risk.

- The Charleston Fire Department should deploy additional resources to working incidents in a structured manner. The transition to a new computer aided dispatch system provides the opportunity to standardize response levels to incidents.

- The Incident Commander should ensure that sufficient resources are available on the incident scene to conduct operations safely and effectively, with additional resources on standby for contingencies and to rotate or relieve companies that require rehabilitation.

- The Charleston Fire Department should ensure that individual companies are staffed, trained, and equipped to perform a specific set of functions. Their collective capabilities must include all of the functions that are essential to conduct effective fire fighting operations. The Charleston Fire Department needs to place an emphasis on truck company operations, including ventilation, forcible entry, and search and rescue tasks.

- The Charleston Fire Department and surrounding fire departments should work as mutual aid partners to develop a regional system that includes common standard operating procedures and compatible equipment, as well as seamless command, coordination, and communications components. A system that provides for the automatic dispatch of the closest available units with appropriate capabilities is highly desirable.

Advancing Technology

The Charleston Fire Department should continually research, adopt and employ technological advances that improve the safety and effectiveness of fire fighting operations. The Department should continue to involve firefighters from every level of the organization in this ongoing effort. These systems include a number of technologies such as:

- Thermal imaging cameras

- Improved communications systems

- Firefighter accountability and tracking systems

- Pre-fire planning and information management systems

- Positive pressure ventilation equipment and techniques

Pre-fire Planning

- The Charleston Fire Department should adopt a more systematic pre-fire planning process to gather and document information and develop familiarity with individual properties, based on risk factors.

- The pre-fire planning system should capture pertinent information in a manner that makes it readily available to command officers during actual incidents – particularly in relation to unusual hazards and special risks.

- The pre-fire planning process should identify properties and situations that require special techniques or capabilities or where the risk exceeds the operational capabilities of the Charleston Fire Department.

- The pre-fire planning process should include a direct connection to code enforcement and risk mitigation programs to address hazardous situations that are encountered.

Code Enforcement and Risk Mitigation

- It is a governmental responsibility to ensure that adopted fire and safety codes are adequately enforced through systematic inspections. The City of Charleston has committed additional resources to code enforcement in the wake of the Sofa Super Store incident. The City should continue to provide sufficient resources to identify and cause correction of hazardous situations.

- Mitigation programs to reduce or eliminate excessive risk levels should be encouraged and supported. Measures that mandate or provide incentives to encourage the installation of automatic sprinklers or support alternative fire protection measures should be adopted as public policy. The City of Charleston should continue to encourage actions at the state level that will support these efforts.

- All Charleston firefighters should be trained and should have a specific responsibility to recognize fire hazards and code violations and to initiate appropriate corrective actions.

Coordination and Liaison

The Charleston Fire Department should have effective liaison relationships with agencies that have closely related responsibilities, including:

- Structured liaison with the Charleston Water System to ensure that hydrants are properly located and maintained and that adequate flows are available to protect the risks in each area of the city. (The City of Charleston should also work closely with the Water System to ensure that sprinkler system connections are provided at the least possible cost.)

- Coordination with the Charleston Police Department and other law enforcement agencies to ensure that traffic control and incident scene perimeters are promptly established and effectively managed.

- Coordination with emergency medical services and volunteer rescue squads in Charleston and Berkeley Counties.

- Coordination with the Charleston Department of Public Service, Building Inspections Division. To assure that fire safety concerns observed by firefighters are corrected, to assure that code compliance inspections of commercial occupancies are conducted on a regular basis, and to assure that buildings are constructed utilizing fire safe practices.

Team Biographies

Post Incident Assessment and Review Team

J. Gordon Routley, Project Leader, is a 40-year veteran of the fire service. He served as the Fire Chief in Shreveport (LA) and was previously an Assistant to the Fire Chief in Phoenix (AZ). He is a Fire Protection Engineer, a Licensed Professional Engineer, and a Technical Advisor to the Fire Director, Montreal, Canada. He also served as a Safety Officer in Prince George's County, Maryland, Fire and EMS Department. Routley is a member of the International Association of Fire Chiefs (IAFC), National Fire Protection Association (NFPA), Institution of Fire Engineers, and the Society of Fire Protection Engineers. He is a Member of the Board of Directors of the Safety, Health and Survival Section of the International Association of Fire Chiefs and liaison between the IAFC-SHS and the National Fallen Firefighters Foundation. He is a graduate of Harvard University's Kennedy School of Government, holds a Master of Arts in Public Administration from Arizona State University, and a Bachelor of Science in Engineering from McGill University.

Michael Chiaramonte is a 40-year veteran of the Lynbrook Volunteer Fire Department in New York. He is a past chief of the department and held the position of Chief Fire Inspector for many years until his retirement from the department. Chiaramonte taught high school English for 36 years and retired from Jericho Public Schools in 1999. He has a Master of Arts in Communications Education from Hofstra University and a Bachelor of Science in English and Public Speaking Education from the University of Houston. He is a certified New York State Building and Fire Inspector. Chiaramonte is an instructor at the National Fire Academy, instructing in fire prevention, communications and leadership. He is a past president of the Eastern Division of the International Association of Fire Chiefs (IAFC), a past chairman of the IAFC Volunteer and Combination Officers Section and past chairman of the IAFC Election Committee. Chiaramonte is a peer evaluator for the Center for Public Safety Excellence and a Chief Fire Officer Designee. He is a contributing editor to Fire Chief Magazine and an advisory board member for the National Fallen Firefighters Foundation.

Brian A. Crawford is an assistant chief and 24-year veteran of the Shreveport (LA) Fire Department, currently serving as the Assistant to the Fire Chief. He is a National Fire Academy (NFA) resident instructor as well as a NFA Executive Fire Officer Program (EFO) graduate, an IAEM Certified Emergency Manager and IAEM Certification Commissioner, as well as holding the Chief Fire Officer (CFO) designation from the Commission on Professional Credentialing. Crawford is a member of the International Association of Fire Chiefs (IAFC), serving on their Human Relations Committee, the National Fire Protection Association (NFPA), and serves on the Editorial Advisory Board for Fire Chief Magazine. He is a graduate of Harvard University's Kennedy School of Senior Executives in State and Local Government, holds a Master of Arts in Industrial Psychology from Louisiana Tech University, a Bachelor of Science in Organizational Management from Wiley College, and an Associate of Science in Paramedic from Bossier Parish Community College where he is currently an adjunct faculty member.

Peter A. Piringer is currently the Public Information Officer (PIO) for Montgomery County Fire & Rescue Services (MD) a position he has held since 2001. Piringer has over 35-years of public safety experience including twenty-four years with Prince George's County (MD) Fire Department where he served as the PIO for more than ten years and as the Assistant PIO with the Maryland State Police. Piringer attended St. Mary's college of Maryland and the University of Maryland College Park and is a graduate of the Prince George's Fire Department Senior Management Institute of Bowie University. Piringer is also the President of the College Park Volunteer Fire Department, Maryland.

Kevin Roche is an Assistant Fire Marshal and 18-year veteran for the Phoenix (AZ) Fire Department. He is a graduate of the Fire Protection and Safety program at Oklahoma State University and earned a Master of Arts in Political Science from the University of Florida. Roche began his career with the Gainesville (FL) Fire-Rescue Department. Roche's experience includes significant work in the areas of fire department facilities planning and fire department logistics. Roche was the author of the "Capital Resource Management" chapter in the text Managing Fire and Rescue Services, published by the International City Management Association. He is also an active writer and consultant on firefighter safety and fire service management issues.

Timothy E. Sendelbach is a 23-year student and educator of the fire & emergency services currently serving as Editor-in-Chief for *FireRescue* Magazine and President of TES^2 Training & Education Services in Savannah (GA). Sendelbach is the Immediate Past President of the International Society of Fire Services Instructors (ISFSI) and has served as Chief of Training for Savannah (GA) Fire & Emergency Services, as Assistant Fire Chief in Missouri City (TX) and as a Firefighter/Paramedic in Kansas City (KS). Sendelbach has earned a Master of Arts in Leadership from Bellevue University, a Bachelor of Science in Fire Administration and Arson and an Associate of Science in Emergency Medical Care from Eastern Kentucky University. Sendelbach has also served as the editor of the International Society of Fire Service Instructors (ISFSI) publication *The Instructor,* and as a contributing author to numerous other publications including: *The Volunteer Voice*, *firehouse.com Members Zone, National Fire & Rescue, The Atlantic Firefighter,* and the *Fire & Emergency Television Network* (FETN) in which he is the writer/developer of the featured *"SURVIVAL!"* program.

Appendix A – Firefighter Listing

Fire Chief - Car 1 – Fire Chief Russell Thomas
Assistant Chief - Car 2 – Assistant Chief Larry Garvin
Battalion 4 - Car 4 – Battalion Chief Buddy Aytes
Battalion 5 - Car 5 – Battalion Chief Raymond Lloyd
Car 303 – Battalion Chief Robert O'Donald
Training Chief – Training Chief Ricky Shriver
Saint Andrews Car 3 – Acting Assistant Chief Morris Sills

Captain 5 – Acting Captain Mark Kelsey
Captain 6 – Captain Mark Davis
Captain 11 – Acting Captain William Johnson
Captain 10 – Captain Chris Villareal
Captain 12 – Acting Captain John Hackett
Captain 15 – Captain Louis Mulkey
Captain 16 – Captain Theodore "Mike" Benke
Captain 19 – Captain William "Billy" Hutchinson
Captain Saint Andrews Engine 2 – Acting Captain Marques Bush

Engineer 5 – Assistant Engineer Michael French
Engineer 6 – Engineer William Kilcoyne
Engineer 10 – Assistant Engineer John Butler
Engineer 11 – Assistant Engineer David Griffin
Engineer 12 – Engineer Tom Horn
Engineer 15 – Engineer Reggie Wescott
Engineer 16 – Engineer Art Wittner
Engineer 19 – Engineer Rodney "Brad" Baity
Saint Andrews Rescue 1 Driver – SA1 - Driver Steven Beasley

Firefighter 6 – Firefighter Thad Morgan
Firefighter 10 – Firefighter Nathan Hawkins
Firefighter 11 – Firefighter TJ Axton
Firefighter 12A – Firefighter John Lemacks in the nozzle position
Firefighter 12B – Firefighter Ed Henry in the suction position
Firefighter 15A – Assistant Engineer Mike Walker in the suction position
Firefighter 15B – Firefighter Scott Thomes in the nozzle position
Firefighter 16 – Firefighter Melvin Champaign
Firefighter 19 – Firefighter James "Earl" Drayton
Ladder 5 Firefighter – Firefighter Brandon Thompson
Saint Andrews Engine 2 Firefighter – SA2 - Firefighter Daniel Bilton
Saint Andrews Rescue 1 Firefighter – Firefighter Jared Malone

Radio Transmission and Phone Call Transcript
Sofa Super Store - Charleston, South Carolina
June 18, 2007

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
Telephone						
	19:07:58		Dispatch	Barrineau	Charleston Fire. How can I help you?	
	19:08:01		Caller		Yes, Sir. I'm at Sofa Super Store on Highway 17. There is a huge fire on the back of the alley [inaudible]	
	19:08:08		Dispatch	Barrineau	Sofa Super Store	
	19:08:09		Caller		Highway 17 You need to go over to that side gate, man. They ain't gonna be able to get through there.	
	19:08:14		Dispatch	Barrineau	Okay and that's.. What's the address for me?	
	19:08:16		Caller		What's the address, Sir? What's the address? 1807 Savannah Highway	
	19:08:22		Dispatch	Barrineau	What's burning in the back?	
	19:08:25		Caller		What's that?	
	19:08:26		Dispatch	Barrineau	What's burning?	
	19:08:27		Caller		Uh, It's in the back of the Sofa Super Store it looks like a little shed or something.	
	19:08:32		Dispatch	Barrineau	OK got you. I'll have someone out there. 1807 Savannah Highway.	
	19:08:35		Caller		Yes Sir.	
	19:08:36		Dispatch	Barrineau	Thank you.	
Channel 1						
19:09:02		0:00:00	Dispatch	Barrineau	Dispatcher to Engine 11, Engine 10, Ladder 5, Battalion 4 go to unit for possible structure. [alarm tones] Dispatcher to Engine 11, Engine 10, Ladder 5, Battalion 4 start enroute to 1807 Savannah Highway, behind the Super Store, Super Sofa Store, possible 76. 19:09 hours	
19:09:13		0:00:11	Car 2	Garvin	System Watch activation, no audio	
19:09:33		0:00:31	Engine 10 Mobile Radio	Villereal	System Watch activation, no audio	
19:09:37		0:00:35	Engine 10 Captain	Villereal	Engine 10 is 10-8 Super Sofa Store	Siren in the background
19:09:39		0:00:37	Engine 10 Mobile Radio	Villereal	System Watch activation, no audio	
19:09:44		0:00:42	Dispatch	Barrineau	10-4, 10, 19:09	
19:09:44		0:00:42	Battalion 4 Mobile Radio	Aytes	Battalion 4 10-8. We got heavy smoke coming from that direction.	Siren in the background
19:09:49		0:00:47	Dispatch	Barrineau	10-4	
19:09:51		0:00:49	Engine 11 Mobile Radio	Johnson	11	
19:09:51		0:00:49	Ladder 5 Mobile Radio	Kelsey	Ladder 5, 10-8	
Channel 1						
19:10:18		0:01:16	Engine 16 Mobile Radio	Benke	System Watch activation, no audio	
19:10:26		0:01:24	Engine 16 Mobile Radio	Wittner	Engine 16, 10-8 going to standby	Engineer Art Wittner talking
19:10:30		0:01:28	Dispatch	Barrineau	10-4 16	
19:10:32		0:01:30	Engine 15 Mobile Radio	Mulkey	Dispatcher 15, 10-8. Relocating to Station 11	
19:10:43		0:01:41	Dispatch	Barrineau	10-4, 15	
19:10:46		0:01:44	Battalion 4 Mobile Radio	Aytes	Battalion 4, 10-97. Bunch of trash and debris burning along side the building.	
19:10:54		0:01:52	Dispatch	Barrineau	10-4, Chief.	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:10:56		0:01:54	Battalion 4 Mobile Radio	Aytes	Battalion 4, dispatcher. It may have got in the building it's right up against the wall	Radio feedback.
19:11:00		0:01:58	Dispatch	Barrineau	10-4. All units, y'all heard the Chief.	
19:11:03		0:02:01	Engine 10 Mobile Radio	Villereal	Engine 10 Read	
19:11:07		0:02:05	Ladder 5 Mobile Radio	Kelsey	Ladder 5 Read	
19:11:09		0:02:07	Engine 16 Mobile Radio	Benke	16 Read	
19:11:11		0:02:09	Dispatch	Barrineau	10-4 all units, 19…	
19:11:11		0:02:09	Car 2 Mobile Radio	Garvin	…11 you need to come behind the Sofa Super Store.	Siren in background
19:11:13		0:02:11	Battalion 4 Mobile Radio	Aytes	Number 11, come in the second entrance right here. I'm right here at the entrance come in here.	Siren in background
19:11:23		0:02:21	Engine 11 Mobile Radio	Johnson	10-4 Chief. We come to the back of the building, coming around.	Siren in background
Channel 1						
19:11:35		0:02:33	Car 2	Garvin	Engine 10 come to me.	
19:11:40		0:02:38	Engine 10 Mobile Radio	Villereal	We're 10-97, Chief.	Siren winding down in the background
19:11:45		0:02:43	Car 2	Garvin	Get your truck in here and back it in right here.	Siren winding down in the background
19:11:50		0:02:48	Engine 10 Mobile Radio	Villereal	10-4	
Channel 1						
19:12:04		0:03:02	Car 2	Garvin	Car 2 to Engine 16	
19:12:08		0:03:06	Engine 16 Mobile Radio	Benke	Go ahead, Chief.	Siren in the background
19:12:10		0:03:08	Car 2	Garvin	When you get 10-97, come inside the building with me.	Siren in the background
19:12:15		0:03:13	Engine 16 Mobile Radio	Benke	16 Read	Siren in the background
19:12:17		0:03:15	Car 2	Garvin	Engine 11….	
19:12:18		0:03:16	Engine 15 Mobile Radio	Mulkey	…15 to Car 2	
19:12:22		0:03:20	Ladder 5 Mobile Radio	Kelsey	System Watch activation, no audio	
19:12:25		0:03:23	Ladder 5 Mobile Radio	Kelsey	Ladder 5 10-97	Last transmission Ladder 5 Captain - Captain Kelsey did not bring his portable radio with him when he entered the structure.
19:12:28		0:03:26	Dispatch	Barrineau	10-4, Ladder 5, 19:12	
19:12:31		0:03:29	Car 1 Mobile Radio	Thomas	Car 1 to 15 you just go ahead to 11	
19:12:33		0:03:31	Car 2	Garvin	System Watch activation, no audio	
19:12:37		0:03:35	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:12:37		0:03:35	Engine 15 Mobile Radio	Mulkey	15 Read	
19:12:40		0:03:38	Ladder 5 Ladderman 1	Thompson	System Watch activation, no audio	
19:12:43		0:03:41	Battalion 4	Aytes	Battalion 4 to Car 2. Chief, I know it's inside that part of the building right there.	
19:12:49		0:03:47	Car 2	Garvin	10-4. Dispatcher send me Engine 12.	
19:12:53		0:03:51	Dispatch	Barrineau	10-4. Dispatcher to Engine 12 standby [alarm tones] Dispatcher to Engine 12 start in route to 1807 Savannah Highway, 1807 Savannah Highway, structure.	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:13:03		0:04:01	Engine 10 Captain	Villereal	System Watch activation, no audio	
19:13:10		0:04:08	Battalion 4	Aytes	Battalion 4 to Engine 12. You need to lay a supply line down here to number 10 down this alleyway, right along side the building.	Sound of pump primer in the background
19:13:17		0:04:15	Engine 11 Captain	Johnson	I need an inch and a half inside this building	
19:13:19		0:04:17				Private call from Engine 3 Captain to Car 2
19:13:24		0:04:22	Engine 12 Mobile Radio	Hackett	12 copies	
19:13:27		0:04:25	Engine 15 Mobile Radio	Mulkey	Dispatcher, 15's west side	
19:13:28		0:04:26				Private call from Engine 3 Captain to Car 2
19:13:31		0:04:29	Dispatch	Barrineau	10-4, 15, I copy	
19:13:31		0:04:29	Car 2	Garvin	15 come on	
19:13:35		0:04:33	Engine 12 Mobile Radio	Hackett	12's, 10-8	Siren starting in the background
19:13:39		0:04:37	Dispatch	Barrineau	10-4 12	
19:13:41		0:04:39	Engine 15 Mobile Radio	Mulkey	Dispatcher, 15's 10-8 to the 76	Siren in the background
19:13:44		0:04:42	Dispatch	Barrineau	10-4, we copy	Phone ringing in the background
19:13:46		0:04:44	Car 2	Garvin	Car 2 to Engine 15, when you get here, bring me an inch and half on the inside of this building, to the rear on the left side, I mean the right side	
19:13:46		0:04:44	Engine 6 Mobile Radio	Davis	System Watch activation, no audio	
19:13:54		0:04:52	Engine 15 Mobile Radio	Mulkey	10-4, copy, going to the rear of the right side	Siren in the background
19:13:59		0:04:57	Engine 6 Mobile Radio	Davis	Engine 6 is 10-8 relocating west side	
19:14:02		0:05:00	Dispatch	Barrineau	10-4, 6	
19:14:05		0:05:03	Battalion 4	Aytes	Battalion 4 to Car 2. Chief, can you get in that back building.	
19:14:10		0:05:08	Car 2	Garvin	Car 4, I've got fire inside the rear of the building and it's walking its way right on into the, into the showroom.	
19:14:17		0:05:15	Engine 15 Nozzle	Thomes	System Watch activation, no audio	
19:14:19		0:05:17	Battalion 4	Aytes	System Watch activation, no audio	
19:14:23		0:05:21	Car 2	Garvin	Car 2 to dispatcher, send me Engine 6	
19:14:27		0:05:25	Dispatch	McIver	10-4, dispatcher to Engine 6, 1807 Savannah Highway, 1-8-0-7 Savannah Highway, at the Sofa Super Store, time out 19:14	
19:14:37		0:05:35	Car 1 Mobile Radio	Thomas	[inaudible] Is engine 19 in the station?	Siren in the background
19:14:37		0:05:35	Engine 6 Mobile Radio	Davis	System Watch activation, no audio	
19:14:41		0:05:39	Engine 15 Nozzle	Thomes	System Watch activation, no audio	
19:14:44		0:05:42	Dispatch	McIver	Affirmative	
19:14:45		0:05:43	Car 1 Mobile Radio	Thomas	Alright, send 19, umm, and tell, umm, 6 to relocate to 11.	Siren in the background
19:14:54		0:05:52	Engine 13 Mobile Radio	Harrison	13's 10-13	10-13 = back in service
19:14:56		0:05:54	Dispatch	McIver	10-4 13	
19:14:56		0:05:54	Dispatch	Barrineau	Dispatcher to Engine 6 go to 11, relocate to 11, 6	
19:15:01		0:05:59	Engine 6 Mobile Radio	Davis	System Watch activation, no audio	
19:15:01		0:05:59	Engine 16 Mobile Radio	Benke	System Watch activation, no audio	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:15:01		0:05:59	Dispatch	McIver	Engine 19 you copy?	
19:15:05		0:06:03	Car 2	Garvin	Charge that line that's coming [inaudible] that line	
19:15:07		0:06:05	Engine 19 Captain	Hutchinson	System Watch activation, no audio	
19:15:10		0:06:08	Engine 16 Mobile Radio	Benke	16 to Car 2, Chief, do you want us at the rear of the building making entry?	Siren in the background
19:15:11		0:06:09	Engine 19 Captain	Hutchinson	System Watch activation, no audio	
19:15:15		0:06:13	Car 2	Garvin	Negative, come to the front door and get me a 2 ½ and bring the 2 ½ in here	
19:15:15		0:06:13	Battalion 4	Aytes	System Watch activation, no audio	
19:15:19		0:06:17	Engine 16 Mobile Radio	Benke	16 copy, we're 10-97.	
19:15:24		0:06:22	Engine 19 Captain	Hutchinson	System Watch activation, no audio	
19:15:25		0:06:23	Dispatcher	Barrineau	10-4, 16	
19:15:26		0:06:24	Engine 10 Captain	Villereal	System Watch activation, no audio	
19:15:27		0:06:25	Engine 19 Captain	Hutchinson	System Watch activation, no audio	
19:15:30		0:06:28	Battalion 5 Mobile Radio	Lloyd	Battalion 5, [inaudible]	Assume Battalion 5 is beginning his response to the incident.
19:15:31		0:06:29	Car 1 Mobile Radio	Thomas	Car 1 to Dispatcher, how about call St. Andrews and just ask them to help us West Ashley pick up the calls if we get anything	Siren in the background
19:15:32		0:06:30	Engine 10 Captain	Villereal	System Watch activation, no audio	
19:15:38		0:06:36	Dispatch	Barrineau	10-4 Chief, I copy.	
19:15:42		0:06:40	Engine 10 Captain	Villereal	System Watch activation, no audio	
19:15:45		0:06:43	Engine 15 Mobile Radio	Mulkey	Engine 15 to Car 2.	Siren in the background
Channel 1						
19:15:56		0:06:54	Ladder 5 Engineer	French	Engine 11 charge your line.	May be in SCBA facepiece.
19:15:59		0:06:57	Engine 10 Captain	Villereal	System Watch activation, no audio	
19:16:01		0:06:59	Engine 19 Mobile Radio	Hutchinson	19, 10-8 Dispatcher.	
19:16:04		0:07:02	Dispatch	McIver	10-4, 19, 19:16	
19:16:09		0:07:07	Engine 6 Mobile Radio	Davis	6 is West side	
19:16:11		0:07:09	Dispatch	McIver	10-4, 6	
19:16:16		0:07:14	Ladder 5 Ladderman 1	Thompson	System Watch activation, no audio	
19:16:21		0:07:19	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:16:23		0:07:21	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:16:23		0:07:21	Ladder 5 Ladderman 1	Thompson	Truck 5 to Engine 11, charge that inch and a half	In SCBA facepiece.
19:16:28		0:07:26	Ladder 5 Ladderman 1	Thompson	System Watch activation, no audio	
19:16:32		0:07:30	Car 1 Mobile Radio	Thomas	Car 1 10-97 Dispatcher	
19:16:35		0:07:33	Dispatch	Barrineau	10-4, Car 1, 19:16	
Channel 1						
19:16:39		0:07:37	Engine 11 Suction	Axson	System Watch activation, no audio	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:16:51		0:07:49	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:16:56		0:07:54	Engine 10 Captain	Villereal	System Watch activation, no audio	
19:16:56		0:07:54	Battalion 4	Aytes	Battalion 4,	
19:16:57		0:07:55	Car 2	Garvin	[inaudible] to Engine 16	PASS in the background.
19:16:58		0:07:56	Engine 10 Captain	Villereal	System Watch activation, no audio	
19:17:01		0:07:59	Battalion 4	Aytes	Battalion 4 to Captain Engine 12	Siren in the background.
19:17:05		0:08:03	Engine 12 Mobile Radio	Hackett	…12	Siren in the background.
19:17:07		0:08:05	Battalion 4	Aytes	Captain Johnny, I need you to come down and a lay a supply line to number 10	Siren in the background
19:17:11		0:08:09	Engine 12 Mobile Radio	Hackett	Where do you want us?	Siren in the background
19:17:13		0:08:11	Engine 16 Mobile Radio	Benke	System Watch activation, no audio	
19:17:14		0:08:12	Car 2	Garvin	[inaudible] ten, engine 12, lay a supply line to engine 10	Siren in the background
19:17:16		0:08:14	Battalion 4	Aytes	System Watch activation, no audio	
19:17:22		0:08:20	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:17:25		0:08:23	Car 1	Thomas	12 give #10 a supply line	Siren in the background
19:17:28		0:08:26	Engine 12 Mobile Radio	Hackett	Copy	
19:17:30		0:08:28	Engine 15 Mobile Radio	Mulkey	15's coming, 97	Siren in the background.
19:17:31		0:08:29	Engine 16 Captain	Benke	System Watch activation, no audio	
19:17:34		0:08:32	Dispatch	McIver	10-4, 15, 19:17	Siren in the background
19:17:36		0:08:34	Car 2	Garvin	Alright, 16, go to the hydrant	
19:17:39		0:08:37	Engine 12 Mobile Radio	Hackett	Where's 10, alright we got 'em	
19:17:47		0:08:45	Engine 19 Captain	Hutchinson	System Watch activation, no audio	
19:17:49		0:08:47	Ladder 5 Ladderman 1	Thompson	System Watch activation, no audio	
Channel 1						
19:18:00		0:08:58	Engine 3	Waring	Engine 3 to Car 2	Engine 3 was on a detail out of their first-due area.
Channel 1						
19:18:03		0:09:01	Engine 9 Suction	Holt	System Watch activation, no audio	
19:18:04		0:09:02	Car 1	Thomas	System Watch activation, no audio	
19:18:17		0:09:15	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:18:24		0:09:22	Engine 10 Captain	Villereal	System Watch activation, no audio	
Channel 1						
19:18:31		0:09:29	Engine 11 Engineer	Griffin	System Watch activation, no audio	
19:18:57		0:09:55	Engine 10 Captain	Villereal	System Watch activation, no audio	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
Channel 1						
19:19:07		0:10:05	Car 1	Thomas	Alright, Engine 6 what's your 20?	20 is short for 10-20 and means location
19:19:10		0:10:08	Engine 6 Mobile Radio	Davis	In front of station 10	
19:19:10		0:10:08	Engine 12 Engineer	Horn	System Watch activation, no audio	
19:19:12		0:10:10	Car 1	Thomas	I want you to come on and park your truck in the middle of the street on Savannah Highway and come in the front door.	
19:19:14		0:10:12	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:19:18		0:10:16	Engine 6 Mobile Radio	Davis	6 is 10-8	
19:19:20		0:10:18	Dispatch	Barrineau	10-4, 6	
19:19:25		0:10:23				Private call from BC3 to the Engine 3 Captain
Channel 1						
19:19:28		0:10:26	Engine 12 Engineer	Horn	System Watch activation, no audio	
19:19:33		0:10:31	Car 1	Thomas	Car 1 dispatcher, give us the power company	
19:19:36		0:10:34	Dispatch	Barrineau	10-4, Chief	
19:19:36		0:10:34	Engine 16 Captain	Benke	Charge that 2 ½	In SCBA facepiece
19:19:40		0:10:38	Engine 11 Engineer	Griffin	Engineer 11 to Captain 11	
19:19:44		0:10:42	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:19:50		0:10:48	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:17:48		0:08:46				Private call from Engine 3 Captain to BC3
19:19:54		0:10:52	Engine 11 Engineer	Griffin	Engineer 11 to Captain 11	
19:19:59		0:10:57	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:20:00		0:10:58	Car 2	Garvin	What you need, David, he's busy	Not in facepiece, faint siren in the background
19:20:03		0:11:01	Engine 11 Engineer	Griffin	Do you want the 2 ½ charged?	
19:20:05		0:11:03				Private call from Engine 3 Captain to BC3
19:20:05		0:11:03	Car 2	Garvin	Not until you get that supply line charged.	Faint siren in the background.
19:20:05		0:11:03	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:20:07		0:11:05	Engine 16 Captain	Benke	System Watch activation, no audio	
19:20:07		0:11:05	Ladder 5 Ladderman 1	Thompson	System Watch activation, no audio	
19:20:08		0:11:06	Engine 19 Mobile Radio	Hutchinson	19's, 10-97	Siren in background, last transmission from Engine 19 Captain
19:20:08		0:11:06	Engine 11 Engineer	Griffin	System Watch activation, no audio	
19:20:14		0:11:12	Engine 10 Captain	Villareal	System Watch activation, no audio	

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19:20:25		0:11:23	Engine 15 Engineer	Wescott	System Watch activation, no audio	
Telephone						
	19:19:58	0:10:56		Power Company	[ringing} Good evening, this is Deborah.	
	19:19:59	0:10:57	Dispatch	Barrineau	Yeah, Deborah. This is Operator 4 with the Charleston Fire Department. I need a truck immediately to 1807 Savannah Highway. We got about ten engines at a big fire and we need the power cut and I need to get them there as soon as you can get one rolling there.	
	19:20:16	0:11:14		Power Company	Okay, this is number 4?	
	19:20:17	0:11:15	Dispatch	Barrineau	Yeah, Operator 4. 1807 Savannah Highway between Wappoo Road and Stinson. They can't miss it.	
	19:20:23	0:11:21		Power Company	Wappoo and Stinson?	
	19:20:24	0:11:22	Dispatch	Barrineau	Yeah.	
	19:20:25	0:11:23		Power Company	S-t-i-n-s-o-n?	
	19:20:26	0:11:24	Dispatch	Barrineau	Right, exactly.	
	19:20:28	0:11:26		Power Company	And what is your call back number?	
	19:20:30	0:11:28	Dispatch	Barrineau	XXX-XXXX.	Number removed by Kevin Roche during transcript preparation
	19:20:33	0:11:31		Power Company	Area code 843?	
	19:20:34	0:11:32	Dispatch	Barrineau	Yeah, please just get them in route, okay, hon?. We got ten engines there and it is burning like crazy. We need the power cut.	
	19:20:40	0:11:38		Power Company	Alright, Sir.	
	19:20:41	0:11:39	Dispatch	Barrineau	Thank you, love. We appreciate it.	
	19:20:16	0:11:14		Power Company	Okay, bye bye.	
Channel 1						
19:20:31		0:11:29	Engine 12 Engineer	Horn	Water coming 10	
19:20:38		0:11:36	Battalion 3	Ackerman	System Watch activation, no audio	
19:20:41		0:11:39	Battalion 3	Ackerman	Captain 3 stand by for a page	
19:20:46		0:11:44	Engine 19 Engineer	Baity	System Watch activation, no audio	
19:20:52		0:11:50	Car 2	Garvin	System Watch activation, no audio	
19:20:55		0:11:53				Private call to Engine 3 Captain from BC3
19:20:55		0:11:53	Engine 12 Engineer	Horn	[inaudible].. to dispatch, we need PD we got people running over the hose.	
19:20:59		0:11:57	Dispatcher	McIver	That's Affirmative. They're enroute.	
19:21:00		0:11:58	Dispatcher		System Watch activation, no audio	
Channel 1						
19:21:04		0:12:02				Private call to BC3 from Engine 3 Captain
19:21:05		0:12:03	Car 2	Garvin	System Watch activation, no audio	
19:21:20		0:12:18	Engine 11 Captain	Johnson	System Watch activation, no audio	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:21:21		0:12:19	Engine 15 Captain	Mulkey	Engine 15 to Car 2	In SCBA facepiece
19:21:22		0:12:20	Car 2	Garvin	System Watch activation, no audio	
19:21:26		0:12:24	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:21:26		0:12:24	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:21:26		0:12:24	Car 2	Garvin	16, what about that supply line?	
19:21:27		0:12:25	Engine 11 Captain	Johnson	System Watch activation, no audio	[inaudible voices]
19:21:29		0:12:27	Engine 15 Captain	Mulkey	System Watch activation, no audio	[inaudible voices]
19:21:32		0:12:30	Engine 16 Suction	Champaign	System Watch activation, no audio	[inaudible voices]
19:21:34		0:12:32	Car 2	Garvin	System Watch activation, no audio	[inaudible voices]
19:21:38		0:12:36	Engine 16 Suction	Champaign	System Watch activation, no audio	[inaudible voices]
19:21:39		0:12:37	Engine 10 Captain	Villareal	System Watch activation, no audio	[inaudible voices]
19:21:40		0:12:38	Engine 12 Suction	Henry	System Watch activation, no audio	[inaudible voices]
19:21:41		0:12:39	Engine 16 Mobile Radio	Wittner	[inaudible] …a hydrant chief	
			Unknown		[inaudible voices]	Possibly in SCBA facepieces.
19:21:50		0:12:48	Engine 6 Mobile Radio	Davis	6, 10-97	Siren in background.
19:21:52		0:12:50	Engine 9 Suction	Holt	System Watch activation, no audio	
19:21:53		0:12:51	Dispatcher	Barrineau	10-4, 6, 19:22	
19:21:57		0:12:55	Engine 10 Captain	Villareal	System Watch activation, no audio	[inaudible voices]
19:21:58		0:12:56	Engine 15 Captain	Mulkey	System Watch activation, no audio	[inaudible voices]
19:21:59		0:12:57	Engine 12 Captain	Hackett	System Watch activation, no audio	[inaudible voices]
19:22:05		0:13:03	Engine 10 Captain	Villareal	System Watch activation, no audio	[inaudible voices]
19:22:08		0:13:06	Engine 12 Suction	Henry	System Watch activation, no audio	[inaudible voices]
19:22:16		0:13:14	Engine 16 Suction	Champaign	System Watch activation, no audio	[inaudible voices]
19:22:21		0:13:19	Engine 12 Nozzle	LeMacks	System Watch activation, no audio	[inaudible voices]
19:22:28		0:13:26	Engine 12 Suction	Henry	System Watch activation, no audio	[inaudible voices]

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					[inaudible] ...0HAH0700 on a black Jeep Cherokee [inaudible] Mallery Street to Park Street	This transmission appears to be a radio transmission by a law enforcement officer from Saint Simons Island, Georgia. Charleston Police Department Communications has reported receiving audio from Georgia due to a phenomenon called "skip". Saint Simons Island has a Mallery Street that intersects with a Park Avenue. Communications for Saint Simons Island has confirmed that this is their traffic.
19:22:33		0:13:31	Engine 11 Engineer	Griffin	Engine 11, Engineer 16	
19:22:36		0:13:34	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:22:39		0:13:37	Engine 16 Mobile Radio	Wittner	Go ahead	
19:22:41		0:13:39	Engine 11 Engineer	Griffin	I'm half way	
19:22:44		0:13:42	Engine 16 Mobile Radio	Wittner	10-4, I'm trying to get you a supply line, I gotta find a hydrant	
19:22:48		0:13:46	Engine 11 Engineer	Griffin	10-4	
Channel 1						
19:23:09		0:14:07	Car 1	Thomas	Alright, Larry, how we looking inside the store?	
19:23:16		0:14:14	Car 2	Garvin	Chief, I'm trying to get back to it now	In SCBA facepiece
Channel 1						
19:23:18		0:14:16	Engine 16 Captain	Benke	System Watch activation, no audio	
19:23:30		0:14:28	Car 2	Garvin	Car 2 to Captain of Engine 11	In SCBA facepiece, PASS device in prealert in the background
19:23:35		0:14:33	Engine 19 Engineer	Baity	System Watch activation, no audio	
19:23:44		0:14:42	Engine 12 Suction	Henry	System Watch activation, no audio	
19:23:49		0:14:47	Engine 10 Engineer	Butler	Engine 12 you sending us some more water?	
19:23:55		0:14:53	Engine 12 Engineer	Horn	Affirmative	
19:24:02		0:15:00	Engine 10 Captain	Villareal	[PASS alarm]	
19:24:09		0:15:07	Battalion 5	Lloyd	Battalion 5 is 10-97	
19:24:09		0:15:07	Car 1	Thomas	System Watch activation, no audio	
19:24:10		0:15:08	Engine 16 Captain	Benke	System Watch activation, no audio	
19:24:12		0:15:10	Dispatch	McIver	10-4, Battalion 5, 19:24	
19:24:14		0:15:12	Dispatch	Barrineau	Dispatcher to Engine 3 relocate to 16 and 19, Engine 3 go to 16 and 19, per Car 3	
19:24:22		0:15:20	Engine 3	Waring	Engine 3 read	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:24:22		0:15:20	Car 2	Garvin	[inaudible} ...we need that 2-1/2 ….	Likely in SCBA facepiece., C2 begins to talk, if overridden by Dispatch and then completes his message after dispatch completes its "10-4" message
19:24:25		0:15:23	Dispatch	Barrineau	10-4	Dispatcher takes priority over portable Car 2
19:24:29		0:15:27	Car 1	Thomas	[Inaudible] …to Engine 12	
19:24:35		0:15:33	Car 1	Thomas	Car 1 to Engineer 12	
19:24:35		0:15:33	Engine 16 Mobile Radio	Wittner	System Watch activation, no audio	
19:24:37		0:15:35	Engine 12 Engineer	Horn	Go ahead Chief	
19:24:45		0:15:43	Car 1	Thomas	Car 1 to the engineer in 12	
19:24:48		0:15:46	Engine 12 Engineer	Horn	Go ahead Chief	
19:24:50		0:15:48	Car 1	Thomas	Alright, give us 50 more pounds on that supply line, 50 more pounds on that supply line	
19:24:57		0:15:55	Engine 12 Engineer	Horn	50 pounds, coming.	
Telephone						
	19:24:00	0:14:58	Dispatch	Barrineau	Yeah.	
	19:24:01	0:14:59	Battalion 3	Ackerman	Hey, Budro	
	19:24:02	0:15:00	Dispatch	Barrineau	Yeah	
	19:24:03	0:15:01	Battalion 3	Ackerman	Who's at 16 and 19?	
	19:24:04	0:15:02	Dispatch	Barrineau	Uh, 16 and 19, Chief? Amm…	
	19:24:06	0:15:04	Battalion 3	Ackerman	Station, yeah, station. Nobody, right?	
	19:24:07	0:15:05	Dispatch	Barrineau	Nobody, no.	
	19:24:08	0:15:06	Battalion 3	Ackerman	Tell three to go ahead and relocate there.	
	19:24:10	0:15:08	Dispatch	Barrineau	Alright.	
	19:24:10	0:15:08	Battalion 3	Ackerman	Alright	
	19:24:11	0:15:09	Dispatch	Barrineau	Thank you	
Channel 1						
19:25:13		0:16:11	Engine 10 Engineer	Butler	12, I'm down to a quarter.	
19:25:15		0:16:13	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:25:18		0:16:16	St. Andrews Engine 2	Bush	St. Andrew's Engine 2 and Rescue 1 to City of Charleston	
19:25:19		0:16:17	Ladder 5 Ladderman 1	Thompson	System Watch activation, no audio	
19:25:26		0:16:24	Car 1	Thomas	Car 1 to 12, did you give me my 50 pounds?	
19:25:29		0:16:27	Engine 12 Engineer	Horn	That's affirmative	
19:25:33		0:16:31	Ladder 5 Ladderman 1	Thompson	System Watch activation, no audio	
19:25:34		0:16:32	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:25:37		0:16:35	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:25:38		0:16:36	Car 1	Thomas	Car 1 to Engine 12	
19:25:40		0:16:38	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:25:41		0:16:39	Engine 12 Engineer	Horn	[inaudible] I've got 50 pounds to you	
19:25:41		0:16:39	Engine 10 Captain	Villareal	System Watch activation, no audio	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:25:45		0:16:43	Car 1	Thomas	Alright, give me 50 more pounds on the supply line	
19:25:45		0:16:43	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:25:47		0:16:45	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:25:49		0:16:47	Engine 12 Engineer	Horn	System Watch activation, no audio	
19:25:51		0:16:49	Engine 12 Engineer	Horn	… 50 pounds on the supply line	
19:25:53		0:16:51	Car 1	Thomas	50 more on the supply line	
19:25:59		0:16:57	Engine 12 Engineer	Horn	Affirmative. 50 pounds	
19:26:07		0:17:05	Engine 11 Engineer	Griffin	Engine 11, Engineer 16	PASS in the background.
19:26:13		0:17:11	Car 2	Garvin	System Watch activation, no audio	
19:26:17		0:17:15	Engine 16 Mobile Radio	Wittner	Water coming	
19:26:20		0:17:18	Engine 11 Engineer	Griffin	System Watch activation, no audio	
Telephone						
	19:26:35	0:17:33	Dispatch	Barrineau	Charleston Fire.	
	19:26:36	0:17:34		Caller	Yes	
	19:26:37	0:17:35	Dispatch	Barrineau	Yeah	
	19:26:38	0:17:36		Caller	Yeah, I'm trapped inside.	
	19:26:40	0:17:38	Dispatch	Barrineau	You're inside?	
	19:26:41	0:17:39		Caller	I'm inside, can you help please?	
	19:26:43	0:17:41	Dispatch	Barrineau	You're inside, whereabouts?	
	19:26:45	0:17:43		Caller	At the back.	
	19:26:46	0:17:44	Dispatch	Barrineau	Oh, at the back. At the back? He's in the back, he's trapped in the back.	
	19:26:50	0:17:48		Caller	[Inaudible] I'm choking	
	19:26:51	0:17:49	Dispatch	Barrineau	Okay, we'll get you there, buddy. We coming in there for you right now, okay?	
	19:26:55	0:17:53		Caller	Alright, please [inaudible]	
	19:26:56	0:17:54	Dispatch	Barrineau	Okay buddy, we're there, we're there, we'll be there, okay buddy	
	19:27:00	0:17:58		Caller	Thank you. Excuse me, I've got a wife and kids.	
	19:27:02	0:18:00	Dispatch	Barrineau	I know. Partner, just hang in there. Just stay low for me. You get low on the ground.	
	19:27:07	0:18:05		Caller	[Inaudible] It's getting hot.	
	19:27:09	0:18:07	Dispatch	Barrineau	Once they, once they get in there, you holler as loud as you can, okay?	
	19:27:13	0:18:11		Caller	I'm beating on the walls with a hammer.	
	19:27:16	0:18:14	Dispatch	Barrineau	Okay, keep beating, just keep beating. But try to stay as low and as calm as you can be. They'll get in. They'll bust in and get in for you. They've got a bunch of trucks there. Don't worry. We're gonna get you out of there. [dial tone]	
	19:27:27	0:18:25	Dispatch	Barrineau	He just hung up. [dial tone}	
	19:27:47	0:18:45	Dispatch	Barrineau	Charleston Fire, how can I help you?	
	19:27:50	0:18:48		Caller	Is there a fire on James Island?	
	19:27:51	0:18:49	Dispatch	Barrineau	No, there's one on Savannah Highway.	
	19:27:53	0:18:51		Caller	Savannah Highway, is it City of Charleston?	
	19:27:55	0:18:53	Dispatch	Barrineau	Yeah.	
	19:27:56	0:18:54		Caller	But where is it located?	
	19:27:58	0:18:56	Dispatch	Barrineau	Partner, listen we can't talk right now. Just call back later.	
Channel 1						

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:26:35		0:17:33	Dispatch	McIver	Dispatcher to Car 1	Barrineau can be heard in the background initiating call with trapped worker
19:26:38		0:17:36	Car 1	Thomas	Go ahead	
19:26:40		0:17:38	Dispatch	McIver	10-4, Be advised we're getting a 911 call stating that there is a person trapped in the building, at the back of the building, at the back of the building.	
19:26:41		0:17:39	Battalion 5	Lloyd	System Watch activation, no audio	
19:26:49		0:17:47	Ladder 5 Ladderman 1	Thompson	System Watch activation, no audio	
19:26:51		0:17:49	Car 1	Thomas	10-4	PASS in background.
19:26:53		0:17:51	Ladder 5 Ladderman 1	Thompson	System Watch activation, no audio	
19:26:59		0:17:57	Car 2	Garvin	Car 2 to Car 1.	Not likely in facepiece.
19:27:01		0:17:59	Car 1	Thomas	Go ahead, Chief	PASS in background.
19:27:03		0:18:01	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:27:03		0:18:01	Car 2	Garvin	System Watch activation, no audio	
19:27:04		0:18:02	Outside Agency		… to the City of Charleston, City PD's got us…	
19:27:05		0:18:03	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:27:06		0:18:04	Engine 16 Mobile Radio	Wittner	water coming to you	
19:27:12		0:18:10	Ladder 5 Ladderman 1	Thompson	System Watch activation, no audio	
19:27:18		0:18:16	Engine 12 Suction	Henry	System Watch activation, no audio	
19:27:19		0:18:17	Engine 15 Nozzle	Thomes	System Watch activation, no audio	
19:27:44		0:18:42	Ladder 5 Ladderman 1	Thompson	System Watch activation, no audio	
			Unknown		[Inaudible – possibly "lost inside" or "trapped inside"]	vibralert sound
Telephone						
	19:27:24	0:18:22		McIver	[ringing] Fire Department	
	19:27:25	0:18:23		Hawkins	Is that caller inside the building calling you?	
	19:27:28	0:18:26		McIver	Yes.	
	19:27:29	0:18:27		Hawkins	Then you need to tell him that.	
	19:27:30	0:18:28		McIver	I did.	
	19:27:32	0:18:30		Hawkins	No you didn't.	
	19:27:32	0:18:30		McIver	I said we received a 911 call that he is in the building.	
	19:27:35	0:18:33		Hawkins	That ain't what it sounded like. It sounds like we are getting a 911 call that somebody is trapped in the building.	
	19:27:41	0:18:39		McIver	No	
	19:27:42	0:18:40		Hawkins	And the people calling you is in the building.	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
	19:27:44	0:18:42		McIver	Yeah. 'cause I said he's in the back of the store.. I.. well…. I don't know..wait a minute. [Inaudible in background]	Chief Thomas can be heard in the background on channel one talking about the rear door (192755) McIver and Hawkins are likely listening to channel one during the pause and hear a more detailed description of the trapped person's location on that channel.
	19:28:07	0:19:05		Hawkins	There you go. That's good stuff	
	19:28:09	0:19:07		McIver	Okay	
	19:28:10	0:19:08		Hawkins	Alright, bye.	
	19:28:11	0:19:09		McIver	Alright	
Channel 1						
19:27:51		0:18:49	Car 1	Thomas	Car 1 to Car 2	
19:27:53		0:18:51	Car 2	Garvin	Go ahead Chief	
19:27:55		0:18:53	Car 1	Thomas	Alright, we got the door open to this back building now. We've got a stacked tip inside. Ahh, tell me what you got in there.	PASS in background. Chief Thomas is referring to the warehouse as the back building.
19:28:03		0:19:01	Car 2	Garvin	They told me at first, Chief, that he left but now they realize he's in the building	
19:28:08		0:19:06	Car 1	Thomas	Just do what we can do.	PASS in background.
19:28:10		0:19:08	Car 2	Garvin	10-4	
Channel 1						
19:28:19		0:19:17	Dispatch	Barrineau	Chief, he's going to be in the very back and is going to be beating on the wall with a hammer. I just talked to him on the phone and then we got cut off. He's going to be in the rear of the building.	
19:28:29		0:19:27	Car 2	Garvin	10-4	
Channel 1						
19:28:42		0:19:40	Car 2	Garvin	Car 2 to any available fireman that's in front up by number 11	PASS in background, not in SCBA facepiece.
19:28:53		0:19:51	Car 2	Garvin	Car 2 to Engineer number 11	PASS in background.
19:28:58		0:19:56	Battalion 5	Lloyd	System Watch activation, no audio	
19:28:58		0:19:56	Engine 11 Engineer	Griffin	System Watch activation, no audio	
19:29:00		0:19:58	Engine 16 Suction	Champaign	Which way out?	In SCBA facepiece.
19:29:02		0:20:00	Engine 11 Engineer	Griffin	Water's coming right now	This is most likely when the 2-1/2 line through the front door was charged.
19:29:03		0:20:01	Engine 16 Suction	Champaign	[inaudible] …way out	In SCBA facepiece.

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19:29:07		0:20:05	Engine 16 Suction	Champaign	System Watch activation, no audio	There are a total of nine radio activations by Firefighter Champaign, many with no discernable audio
19:29:11		0:20:09	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:29:15		0:20:13	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:29:24		0:20:22	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:29:30		0:20:28	Engine 16 Suction	Champaign	System Watch activation, no audio	
Telephone						
	19:29:14	0:20:12	Dispatch	Barrineau	[Inaudible] Send someone over there right now.	Charleston County EMS shows this time as 19:20:45 and acknowledges that it is not correct
	19:29:19	0:20:17	EMS Dispatch		EMS	
	19:29:20	0:20:18	Dispatch	Barrineau	Hey, Sweetie. This is Operator 4. How about do me a favor and get a unit over to 1807 Savannah Highway, the Super Store. We got about ten trucks over there and there is supposed to be a man trapped inside too, okay.	
	19:29:29	0:20:27	EMS Dispatch		Oh, that's at that fire y'all working?	
	19:29:30	0:20:28	Dispatch	Barrineau	Yeah, please send a, please send one to be standing by for us.	
	19:29:34	0:20:32	EMS Dispatch		Alright, and what's the name of the business?	
	19:29:35	0:20:33	Dispatch	Barrineau	Super Sofa, Super Sofa Store…	
	19:29:38	0:20:36	EMS Dispatch		Okay, gotcha.	
	19:29:39	0:20:37	Dispatch	Barrineau	It's at 1807 Savannah Highway, Sweetheart.	
	19:29:41	0:20:39	EMS Dispatch		Gotcha, okay	
	19:29:41	0:20:39	Dispatch	Barrineau	Thanks, love.	
	19:29:42	0:20:40	EMS Dispatch		Bye, bye.	
	19:29:42	0:20:40	Dispatch	Barrineau	Bye bye, Baby.	
Channel 1						
19:29:35		0:20:33	Engine 16 Suction	Champaign	[inaudible] which way out	
19:29:42		0:20:40	Engine 16 Suction	Champaign	Everybody out.	In SCBA facepiece, maybe vibra-alert.
19:29:49		0:20:47	Engine 16 Suction	Champaign	[inaudible]	
Channel 1						
19:29:59		0:20:57	Engine 11 Engineer	Griffin	Engineer 11 to Car 2	PASS in the background.
19:30:02		0:21:00	Car 2	Garvin	I've got some help back here	Likely in the rear of the building?
19:30:03		0:21:01	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:30:06		0:21:04	Engine 11 Engineer	Griffin	…2 ½ charge	
Channel 1						
19:30:15		0:21:13	Engine 16 Suction	Champaign	We need some help out	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:30:20		0:21:18	Engine 16 Captain	Benke	System Watch activation, no audio	Last transmission from Engine 16 Captain
19:30:22		0:21:20	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:30:22		0:21:20	Ladder 5 Ladderman 1	Thompson	This is Thompson. We need some help. [inaudible]	Vibra-alert in background, another voice in facepiece in background. – Maybe "Help!" at the end - Identifed by voice, no System Watch record for Thompson, may be on Mulkey portable radio
19:30:22		0:21:20	Engine 15 Captain	Mulkey	System Watch activation, no audio	Last transmission from Engine 15 Captain
19:30:27		0:21:25	Car 303	O'Donald	303 to Car 1	
19:30:31		0:21:29	Engine 16 Suction	Champaign	[inaudible] …firefighter. Needs some help out. Lost connection with the hose.	In facepiece, vibra-alert in background, may be Champaign
19:30:41		0:21:39	Car 1	Thomas	Car 1 to Dispatcher	PASS in the background
19:30:44		0:21:42	Dispatch	McIver	Go ahead	
19:30:45		0:21:43	Car 1	Thomas	What's my closest unit to the 76?	PASS in the background
19:30:51		0:21:49	Unknown		[inaudible] … I'm in the building…	Likely in SCBA facepiece.
19:30:51		0:21:49	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:30:52		0:21:50	Dispatch		System Watch activation, no audio	
19:30:55		0:21:53	Battalion 3	Ackerman	System Watch activation, no audio	
19:30:58		0:21:56	Car 2	Garvin	Car 1, we trying to get in to this guy now	
19:31:03		0:22:01	Car 1	Thomas	10-4. Car 1 to Dispatcher, what's my closest unit to the 76?	
19:31:08		0:22:06	Dispatcher	McIver	Engine 3 is relocating to Station 16	
19:31:08		0:22:06	Dispatcher		System Watch activation, no audio	
19:31:08		0:22:06	Engine 16 Suction	Champaign	[inaudible]	Possible in facepiece
19:31:11		0:22:09	Car 1	Thomas	Alright, tell number 3, I want them to come to the 76 and I want them to lay the line to the aerial ladder, a line to the snorkel	
19:31:14		0:22:12	Engine 12 Suction	Henry	System Watch activation, no audio	
19:31:19		0:22:17	Battalion 5	Lloyd	Car 5 to Dispatcher, we got the man	
19:31:19		0:22:17	Engine 16 Suction	Champaign	[inaudible, possible "what?"]	
19:31:23		0:22:21	Dispatcher		System Watch activation, no audio	
19:31:24		0:22:22	Car 2	Garvin	System Watch activation, no audio	
19:31:25		0:22:23	Dispatcher		System Watch activation, no audio	
19:31:25		0:22:23	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:31:28		0:22:26	Engine 16 Mobile Radio	Wittner	16 Dispatch. Ahh, tell PD they need to stop traffic going eastbound on a, or northbound on 17 from Wappoo to Randall, [inaudible] on the supply line	
19:31:29		0:22:27	Engine 16 Suction	Champaign	Can you hear me dispatch?	In facepiece
19:31:42		0:22:40	Car 2	Garvin	Car 2 Dispatcher. Get me EMS to this 20, please	PASS in background.
19:31:43		0:22:41	Ladder 5 Engineer	French	System Watch activation, no audio	
19:31:46		0:22:44	Dispatch	McIver	Affirmative, they are already in route	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:31:46		0:22:44	Car 1	Thomas	… what I want you to do when you get here, is come past Sofa Super Store and lay a line to Ladder 5	PASS in background.
19:31:48		0:22:46	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:31:50		0:22:48	Ladder 5 Engineer	French	System Watch activation, no audio	
19:31:55		0:22:53	Engine 19 Suction	Drayton	System Watch activation, no audio	On Channel 2
19:31:56		0:22:54	Engine 3	Waring	Engine 3 to Car 1, we're coming down 526 right now	Siren in background.
19:32:00		0:22:58	Car 1	Thomas	10-4. When you get here, umm, just past Super Sofa Store, in the parking lot next door, James Richardson's gonna set it up.	PASS in the background.
19:32:02		0:23:00	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:32:07		0:23:05	Ladder 5 Engineer	French	System Watch activation, no audio	
19:32:11		0:23:09	Engine 3	Waring	10-4, Chief	
19:32:12		0:23:10	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:32:15		0:23:13	Ladder 5 Engineer	French	[inaudible] Mayday	
19:32:19		0:23:17	Car 303	O'Donald	Car 1…	Full message was – Car 1 somebody's calling a mayday
19:32:20		0:23:18	Unknown		[inaudible] for a message	PASS device sounding in the background
19:32:20		0:23:18	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:32:24		0:23:22	Car 1	Thomas	Go ahead	
19:32:28		0:23:26	Unknown		I love you	PASS in the background
19:32:28		0:23:26	Ladder 5 Engineer	French	System Watch activation, no audio	
19:32:33		0:23:31	Car 303	O'Donald	[Inaudible] Everybody stay off the radio.	Possible backup alarm in the background, likely Ladder 5 backing up
19:32:40		0:23:38	Engine 16 Suction	Champaign	In Jesus Name, Amen	PASS in the background, likely not in facepiece. Likely Champaign
19:32:46		0:23:44	Car 2	Garvin	Dispatcher, give me an ETA on EMS	
19:32:49		0:23:47	Dispatch	Barrineau	EMS should be enroute. I've already called them, Chief.	
19:32:53		0:23:51	Car 2	Garvin	10-4. Tell them, call them back and tell them to come in the parking lot and go by one of the Sofa Super Store's trucks, we've got a man that was in that building.	
19:33:00		0:23:58	Dispatch	Barrineau	10-4	
19:33:01		0:23:59	Car 1	Thomas	Chief Larry [inaudible] in the back, everybody's out of the back	PASS in the background
19:33:05		0:24:03	Car 2	Garvin	Yes sir, Chief, we got him out over here.	
19:33:08		0:24:06	Car 1	Thomas	Alright, everybody stay off the radio, Chief Larry	PASS in the background.
19:33:12		0:24:10	Car 2	Garvin	Yes sir.	
19:33:14		0:24:12	Car 1	Thomas	Is everybody out where you are at?	PASS in the background.
19:33:17		0:24:15	Car 2	Garvin	No sir, we've still got guys in there	
19:33:20		0:24:18	Car 1	Thomas	Chief O'Donald said that sombody's calling for a Mayday. Now, my people in the back are out. What about your people in the front?	PASS in the background.
19:33:26		0:24:24	Car 2	Garvin	10-4	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:33:30		0:24:28	Car 1	Thomas	Make sure they're out. Everybody stay off the radio. Chief Larry, we need to make sure your people are accounted for first, you need to make sure of that.	PASS in the background.
19:33:34		0:24:32	Battalion 4	Aytes	System Watch activation, no audio	
19:33:44		0:24:42	Car 2	Garvin	10-4, Chief. We just got one man out.	PASS in background
19:33:44		0:24:42	Ladder 5 Engineer	French	System Watch activation, no audio	
19:33:47		0:24:45	Car 1	Thomas	Larry, who is it?	PASS in background.
19:33:52		0:24:50	Car 2	Garvin	Mike Walker.	PASS in the background
19:33:53		0:24:51	Unknown		[breathing] Dispatch [inaudible]	
19:33:53		0:24:51	Engine 16 Suction	Champaign	System Watch activation, no audio	
19:33:57		0:24:55	Car 1	Thomas	Chief Larry [inaudible]	
19:33:58		0:24:56	Battalion 4	Aytes	System Watch activation, no audio	Possible sound of breathing.
19:34:01		0:24:59	Car 2	Garvin	Car 2 to Car 1, Mike Walker said it was not him, it was somebody else.	PASS in background
19:34:11		0:25:09	Car 1	Thomas	We need to find out who it is, Chief Larry.	PASS in the background.
19:34:18		0:25:16	Ladder 5 Engineer	French	Mikey French is.	
19:34:21		0:25:19	Car 1	Thomas	Who is it, whose calling the mayday?	PASS in background.
19:34:27		0:25:25	Battalion 4	Aytes	Battalion 4 to Car 1. Chief, do you have a pumper coming to the aerial.	
19:34:31		0:25:29	Car 1	Thomas	Chief Buddy stay off the radio. We're trying to find, to see if we've got a fireman down.	PASS in the background.
19:34:35		0:25:33				Private call from BC3 to Car 303
19:34:35		0:25:33	Ladder 5 Engineer	French	[alarm sound]	Emergency alarm received at Dispatch
19:34:40		0:25:38	Car 1	Thomas	[alarm sound] [inaudible]	
19:34:40		0:25:38				Private call from Car 303 to BC3
19:34:40		0:25:38	Dispatch	McIver	Car 1. [alarm sound] Ladder 5's engineer's walkie's off.	
19:34:42		0:25:40	Dispatch		System Watch activation, no audio	
19:34:45		0:25:43	Dispatch		System Watch activation, no audio	
19:34:45		0:25:43	Ladder 5 Engineer	French	System Watch activation, no audio	
19:34:47		0:25:45	Car 1	Thomas	[inaudible] we need to vacate the building	
19:34:57		0:25:55	Dispatch	McIver	Car 1, the Engineer on Ladder 5's emergency button has been activated	
19:34:57		0:25:55	Dispatcher		System Watch activation, no audio	
19:34:59		0:25:57	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:35:08		0:26:06	Battalion 4	Aytes	Car 1 that's ahh Mike French	
19:35:12		0:26:10	Car 1	Thomas	Where's Michael French?	
19:35:34		0:26:32	Car 2	Garvin	We found William Johnson	
19:35:34		0:26:32				The emergency signal activation initiated by Michael French is cleared from the dispatch console.
19:35:38		0:26:36	Car 1	Thomas	Car 1 to Dispatcher. Umm, Car 1 to, everybody stay off the radio. Is everybody accounted for?	PASS in the background.
19:35:47		0:26:45	Car 1	Thomas	Car 1 to the Captain of 15.	
19:35:51		0:26:49	Car 1	Thomas	System Watch activation, no audio	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
Telephone						
	19:31:40	0:22:38	Dispatch	Barrineau	Yeah.	
	19:31:41	0:22:39	Battalion 6	Neilson	Geno	
	19:31:41	0:22:39	Dispatch	Barrineau	Yes	
	19:31:42	0:22:40	Battalion 6	Neilson	Hey, listen. It sounds like there is fireman saying he's lost connection with the hose and he's lost.	
	19:31:47	0:22:45	Dispatch	Barrineau	They've got too many around there, doll baby. I think they just got the guy that was caught in the back.	McIver can be heard in the background saying that EMS is already enroute - on channel one - 19:31:59
	19:31:54	0:22:52	Battalion 6	Neilson	Okay, because it sounds like a guy says he's lost connection with the hose.	
	19:31:56	0:22:54	Dispatch	Barrineau	Alright.	
	19:31:57	0:22:55	Battalion 6	Neilson	Just listen if hear [inaudible].	
	19:31:58	0:22:56	Dispatch	Barrineau	Yeah. We will, we try to listen.	
	19:32:00	0:22:58	Battalion 6	Neilson	I know.	
	19:32:01	0:22:59	Dispatch	Barrineau	Thank you.	
	19:32:01	0:22:59	Battalion 6	Neilson	I hate to bother you.	
	19:32:02	0:23:00	Dispatch	Barrineau	That's okay darlin'. Appreciate it. I love you man.	
Telephone						
	19:33:07	0:24:05	EMS Dispatch		[ringing] Hey	Charleston County EMS shows this time as 19:24:33 and acknowledges that it is not correct
	19:33:08	0:24:06	Dispatch	Barrineau	Hey, doll baby.	
	19:33:09	0:24:07	EMS Dispatch		Hey.	
	19:33:09	0:24:07	Dispatch	Barrineau	You all been 97 yet? We need you to go into the back. They've got the guy that was trapped inside.	
	19:33:14	0:24:12			Okay	
	19:33:15	0:24:13			He's in the back of the Super Super, Super, I can't even…	
	19:33:18	0:24:16	EMS Dispatch		I know it	
	19:33:19	0:24:17	Dispatch	Barrineau	Damn, I can't pronounce that, Sofa Store.	
	19:33:21	0:24:19	EMS Dispatch		Okay	
	19:33:22	0:24:20	Dispatch	Barrineau	He's in the back. So tell that unit to come around to the back for me, darling.	
	19:33:25	0:24:23	EMS Dispatch		Gotcha	
	19:33:25	0:24:23	Dispatch	Barrineau	Love you man.	
	19:33:26	0:24:24	EMS Dispatch		Alright	
	19:33:26	0:24:24	Dispatch	Barrineau	Alright baby, bye bye	
Telephone						
	19:33:45	0:24:43	Dispacth	Barrineau	Yeah	
	19:33:46	0:24:44	Engine 9 Captain	Hess	Get on the radio. Tell the man down to hit his orange button so they know who it is. You know what I mean?	
	19:33:52	0:24:50	Dispacth	Barrineau	Yeah, yeah.	
	19:33:54	0:24:52	Engine 9 Captain	Hess	Do that	
Telephone						
	19:34:52	0:25:50	Dispatch	Barrineau	[ringing] Yeah. We are trying to get. Charleston Fire Department, what can I do for you?	
	19:34:57	0:25:55		Hawkins	Hey.	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
	19:34:57	0:25:55	Dispatch	Barrineau	Yeah	
	19:34:59	0:25:57		Hawkins	Who was that was talking when praying.	
	19:35:00	0:25:58	Dispatch	Barrineau	I don't know, man, talking. I don't know. We just trying to find out who…	
	19:35:04	0:26:02		Hawkins	[inaudible] on the list coming down, who it was	
	19:35:06	0:26:04	Dispatch	Barrineau	No, we didn't see it, it was too fast. We got the Engineer, Ladder 5, the code was going off. Mike French. Alright, let's go. It's too much going on right now. Love you, Man.	
	19:35:16	0:26:14		Hawkins	Alright, bye.	
Channel 1						
19:36:07		0:27:05	Car 1	Thomas	Car 1 to the Captain of 15 or anybody on 15.	PASS in the background.
Channel 1						
19:36:22		0:27:20	Car 1	Thomas	Car 1 to anybody in Engine 15.	
Channel 1						
19:36:41		0:27:39	Car 1	Thomas	Car 1 to the Captain on 15 or anybody at 15.	
Channel 1						
19:36:55		0:27:53	Car 1	Thomas	Car 1 to anybody in 15 or 11.	PASS in the background.
19:37:02		0:28:00	Car 1	Thomas	Car 1 to Dispatcher. Send me a fresh crew.	PASS in the background.
19:37:08		0:28:06	Dispatcher	McIver	Car 1, send you what?	
19:37:10		0:28:08	Car 1	Thomas	Send me my next closest pumper for manpower as quick as you can.	
19:37:18		0:28:16	Battalion 5	Lloyd	Battalion 5, Dispatcher, send 13 across the bridge	
19:37:22		0:28:20	Dispatch	McIver	10-4. Dispatch to Engine 13, 1807 Savannah Highway, 1807 Savannah Highway, time out 19:37	
19:37:22		0:28:20	Dispatcher		System Watch activation, no audio	
19:37:23		0:28:21	Engine 16 Suction	Champaign	System Watch activation, no audio	Last transmission from Engine 16 Suction
19:37:29		0:28:27	Car 303	O'Donald	System Watch activation, no audio	
19:37:30		0:28:28	Car 2	Garvin	System Watch activation, no audio	
19:37:32		0:28:30	Engine 13 Mobile Radio	Harrison	13, 10-8	
19:37:33		0:28:31	Car 11	Thomas	Car 11 to Captain [inaudible]	
19:37:33		0:28:31	Battalion 5	Lloyd	System Watch activation, no audio	
19:37:33		0:28:31	Car 303	O'Donald	System Watch activation, no audio	
19:37:34		0:28:32	Car 1	Thomas	[inaudible]	
19:37:34		0:28:32	Engine 9 Suction	Holt	System Watch activation, no audio	
19:37:39		0:28:37	Battalion 5	Lloyd	Car 5 to Engine 7 move up to Engine 13	
19:37:42		0:28:40	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:37:51		0:28:49	Car 11	Shriver	Car 11 to Captain Louis Mulkey	Air horns sounding in background.
Channel 2						
19:37:43		0:28:41	Engine 7 Captain	Harriss	10-4 Chief	First recorded transmission on channel 2
Channel 1						

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:38:03		0:29:01	Car 1	Thomas	Car 1 to anybody on 15.	Air horns sounding in background.
19:38:09		0:29:07	Car 1	Thomas	Everybody abandon the building	PASS in the background
19:38:11		0:29:09	Engine 12 Suction	Henry	System Watch activation, no audio	
19:38:14		0:29:12	Engine 11 Engineer	Griffin	Engine 11, Engine16, I need more pressure	
19:38:23		0:29:21	Ladder 5 Engineer	French		Michael French presses the transmit button on his portable radio and reinitiates the emergency system. Since the emergency mode was not cleared from his portable radio after it was activated earlier, the system reverts back to emergency mode.
19:38:26		0:29:24	Engine 12 Suction	Henry	System Watch activation, no audio	
19:38:28		0:29:26	Ladder 5 Engineer	French	System Watch activation, no audio	
19:38:32		0:29:30	Car 11	Shriver	Car 11 to Captain Louis Mulkey	
19:38:33		0:29:31	Ladder 5 Engineer	French	System Watch activation, no audio	
19:38:38		0:29:36	Engine 9 Captain	Hess	System Watch activation, no audio	
19:38:39		0:29:37	Ladder 5 Captain	Richardson	System Watch activation, no audio	The Ladder 5 Captain portable radio was used by James Richardson as he operated as a part of the Ladder 5 apparatus.
19:38:41		0:29:39	Car 11	Shriver	…anybody on Engine 15	
19:38:42		0:29:40	Ladder 5 Engineer	French	System Watch activation, no audio	Last transmission from Ladder 5 Engineer
19:38:54		0:29:52	Car 1	Thomas	Car 1 to 15	PASS in the background
19:38:59		0:29:57	Engine 12 Suction	Henry	System Watch activation, no audio	
19:39:11		0:30:09	Battalion 4	Aytes	Battalion 4 to Car 1	
19:39:15		0:30:13	Engine 7 Nozzle	Singletary	System Watch activation, no audio	
19:39:21		0:30:19	Car 2	Garvin	[inaudible] …16 give me some more water	Possibly “engine 6…”
19:39:24		0:30:22	Car 1	Thomas	Car 1 to the Captain on 15 or anybody on 15	
19:39:37		0:30:35	Engine 13 Mobile Radio	Harrison	13 to Car 1	Siren in the background.
19:39:40		0:30:38	Car 1	Thomas	Go ahead	
19:39:42		0:30:40	Engine 13 Mobile Radio	Harrison	Do you need Air One?	Air One is a support vehicle that has a large cascade system for refilling SCBA cylinders.
19:39:46		0:30:44	Car 1	Thomas	System Watch activation, no audio	
19:39:47		0:30:45	Car 11	Shriver	Car 11 to Engine 16	PASS in the background
19:39:50		0:30:48	Engine 16 Engineer	Wittner	Go ahead	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:39:52		0:30:50	Car 11	Shriver	We need more pressure on this supply line.	PASS in the background
19:39:56		0:30:54	Engine 16 Engineer	Wittner	10-4	
19:39:59		0:30:57	Car 11	Shriver	Take it to 200 pounds if you have to, we're running dry on this end, we've got 2 ½'s off	
19:40:05		0:31:03	Engine 16 Engineer	Wittner	200 pounds it is, Chief	
19:40:09		0:31:07				The second emergency signal activation initiated by Michael French is cleared from the dispatch console.
19:40:11		0:31:09	Car 1	Thomas	…we need to, everybody, Car 1 to Battalion 4. Everybody stay out of the building.	Siren in the background at the end of the transmission.
19:40:19		0:31:17	Engine 3 Mobile Radio	Waring	Engine 3, 10-97	Siren in the background.
19:40:21		0:31:19	Dispatch	Barrineau	10-4, 3, 19:40	
19:40:23		0:31:21	Battalion 4	Aytes	Battalion 4 to Car 1. I've got Hollywood coming to lay a line to the aerial, Chief, and put it up.	Hollywood = St. Pauls Fire District
19:40:29		0:31:27	Battalion 5	Lloyd	Bill, [inaudible]	
19:40:30		0:31:28	Car 1	Thomas	10-4, [inaudible] everybody out of the building. We still can't find the Captain on 15.	
Channel 2						
19:38:28		0:29:26	Engine 7	Harriss	Engine 7 to Dispatch on channel 2. We are 10-8 to Station 13	
19:38:33		0:29:31	Dispatch	McIver	10-4	
19:38:36		0:29:34	Dispatch	Barrineau	10-4, 13	
Telephone						
	19:38:58	0:29:56	Dispatch	Barrineau	[ringing) Charleston Fire, go ahead.	
	19:39:01	0:29:59	Engine 9 Captain	Hess	Hey, I'm going to north bridge, this is #9.	
	19:39:05	0:30:03	Dispatch	Barrineau	Going to the north bridge?	
	19:39:06	0:30:04	Engine 9 Captain	Hess	Yeah, I'm going to north bridge around 12's area unless they call for us.	
	19:39:10	0:30:08	Dispatch	Barrineau	Alright, why don't you try to get closer than that?	
	19:39:12	0:30:10	Engine 9 Captain	Hess	Okay, alright	
	19:39:13	0:30:11	Dispatch	Barrineau	Alright. Thank you man. Bye, bye.	
	19:39:14	0:30:12	Engine 9 Captain	Hess	Bye	
Channel 2						
19:38:56		0:29:54	Engine 8 Mobile Radio	Suggs	Engine 8, Battalion, ahh Engine 8 to Dispatcher on Channel 2	
Telephone						
	19:39:26	0:30:24	Dispatch	McIver	[crying] [ringing] Oh shit.	Charleston County EMS shows this time as 19:30:57 and acknowledges that it is not correct
	19:39:32	0:30:30	EMS Dispatch		EMS	
	19:39:34	0:30:32	Dispatch	McIver	Hey, EMS. This is the Fire Department.	
	19:39:35	0:30:33	EMS Dispatch		Yes	

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	19:39:37	0:30:35	Dispatch	McIver	Ahem, we need some more units over at the Sofa Super Store. I don't know we've got a whole unit that is not answering our radio so we don't know if they are still inside the building or not.	
	19:39:49	0:30:47			Okay	
	19:39:50	0:30:48	Dispatch	McIver	Can you get someone over there, please?	
	19:39:51	0:30:49	EMS Dispatch		We'll see what we can do.	
	19:39:52	0:30:50	Dispatch	McIver	Thank you.	
	19:39:53	0:30:51	EMS Dispatch		Alright.	
Channel 1						
19:40:41		0:31:39	Engine 13 Captain	Harrison	System Watch activation, no audio	
19:40:48		0:31:46	Car 11	Shriver	Car 11 to Captain Louis Mulkey.	PASS in the background
Channel 1						
19:40:59		0:31:57	Ladder 5 Captain	Richardson	System Watch activation, no audio	
19:41:05		0:32:03	Engine 12 Nozzle	Lemacks	System Watch activation, no audio	
19:41:11		0:32:09	Car 11	Shriver	System Watch activation, no audio	
19:41:11		0:32:09	Car 303	O'Donald	System Watch activation, no audio	
19:41:15		0:32:13	Car 11	Shriver	Number 16.	
19:41:17		0:32:15	Engine 12 Suction	Henry	System Watch activation, no audio	
19:41:18		0:32:16	Car 1	Thomas	Car 1 to Battalion 4, stay off the radio, Battalion 4. Nobody else goes inside.	
19:41:25		0:32:23	Battalion 4	Aytes	10-4, Read.	
Channel 2						
19:41:32		0:32:30	Car 11	Shriver	Car 11 to Dispatcher on 2	
19:41:38		0:32:36	Dispatch	Barrineau	Go ahead, Chief	
19:41:40		0:32:38	Car 11	Shriver	Get #16 to go to Channel 2 for me	PASS in the background
19:41:45		0:32:43	Dispatch	Barrineau	Chief, you are breaking up. I can't hear you. What did you say again, repeat?	
19:41:49		0:32:47	Car 11	Shriver	I need #16 to go to Channel 2 for me.	
Channel 1						
19:41:48		0:32:46	Engine 3 Mobile Radio	Witt	19, we've got to find ourselves a hydrant now.	
19:41:53		0:32:51	Engine 16 Engineer	Wittner	Engine 16 to Car 11, Channel 2, Chief.	
Channel 2						
19:42:11		0:33:09	Engine 13 Captain	Harrison	13 to Dispatcher on 2 [inaudible] 13	
19:42:14		0:33:12	Dispatch	Barrineau	13 we,	
19:42:20		0:33:18	Dispatch	Barrineau	Captain 13 just go to the 76. Stop in front. We supposed to stay of the radio on Channel 1. You are not going to have any problem finding where to go. There are enough Chiefs there to tell you where to go. Just go to the 76.	
19:42:40		0:33:38	Engine 13 Captain	Harrison	System Watch activation, no audio	
19:42:40		0:33:38	Car 11	Shriver	System Watch activation, no audio	
19:42:41		0:33:39	Car11	Shriver	System Watch activation, no audio	
19:42:42		0:33:40	Engine 13 Captain	Harrison	13 is 10-97	Siren winding down in the background

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19:42:45		0:33:43	Dispatch	Barrineau	10-4	
19:42:48		0:33:46	Engine 9 Captain	Hess	System Watch activation, no audio	
Channel 1						
19:42:20		0:33:18	Car 1	Thomas	Car 1 to, um, to anyone that's on the side of the building, everybody's outside, correct?	
Channel 1						
19:42:54		0:33:52	Engine 11 Engineer	Griffin	Engineer 16, I need more pressure.	PASS in the background.
19:42:58		0:33:56	Engine 16 Engineer	Wittner	10-4	
19:43:02		0:34:00	Car 11	Shriver	[Inaudible] ….hear me?	
19:43:03		0:34:01	Engine 11 Engineer	Griffin	System Watch activation, no audio	
19:43:06		0:34:04	Car 11	Shriver	Car 11, Engine 16, go to channel 2.	
Channel 2						
19:43:15		0:34:13	Engine 16 Engineer	Wittner	[inaudible] chief. I am sending 225 to him right now.	
19:43:23		0:34:21	Car 11	Shriver	System Watch activation, no audio	
19:43:24		0:34:22	Engine 16 Engineer	Wittner	Engineer 16 to Car 11, you copy?	Pumper running in the background
19:43:30		0:34:28	Car 11	Shriver	Alright, #16, you are pumping, how much are you pumping to #11 right now?	
19:43:36		0:34:34	Engine 16 Engineer	Wittner	I've got 225 coming coming to him, Chief. I did my hose bed plus my two sections of 3-inch	
19:43:44		0:34:42	Car 11	Shriver	Alright, we not getting anything. I need all you can give me over here at the fire now, okay?	
19:43:49		0:34:47	Engine 16 Engineer	Wittner	10-4, Chief. If we can get these damn cops to stop these guys running over my supply line. That is what is killing us. They are parking on the supply line.	
19:43:59		0:34:57	Car 11	Shriver	System Watch activation, no audio	
19:44:03		0:35:01	Engine 9 Captain	Hess	9 Dispatcher on 2. We west side.	Siren in the background
Channel 1						
19:43:52		0:34:50	Engine 11 Engineer	Griffin	16, is that all you can give me?	
Channel 1						
19:44:34		0:35:32	Engine 10 Engineer	Butler	Radio activated, no transmission	
Channel 2						
19:44:34		0:35:32	Car 2	Garvin	Dispatch on 2	PASS device sounding in the background
19:44:39		0:35:37	Dispatch	Barrineau	Go ahead on 2	
19:44:41		0:35:39	Car 2	Garvin	Dispatcher, call Waterworks and see if they can get us more water on Wappoo Road.	
19:44:47		0:35:45	Dispatch	Barrineau	Come back again. I can't hear you.	
19:44:50		0:35:48	Car 2	Garvin	Call Waterworks. See if they can get us some more pressure on Wappoo Road.	
19:44:57		0:35:55	Engine 11 Engineer	Griffin	Go ahead, 16.	
19:45:06		0:36:04	Engine 16 Engineer	Wittner	Go ahead.	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:45:08		0:36:06	Engine 11 Engineer	Griffin	I need more pressure	
19:45:11		0:36:09	Engine 16 Engineer	Wittner	I am giving you everything I got. I am sitting at 250.	
19:45:15		0:36:13	Engine 11 Engineer	Griffin	System Watch activation, no audio	
Channel 1						
19:44:34		0:35:32	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:44:40		0:35:38	Car 1	Thomas	Car 1 to Captain Louis Mulkey	
19:44:48		0:35:46	Engine 3 Engineer	Witt	Engine 3 to Captain 3, the water's coming	
19:44:53		0:35:51	Battalion 4	Aytes	System Watch activation, no audio	
19:44:54		0:35:52	Engine 3 Captain	Waring	10-4, 3	
Channel 1						
19:45:20		0:36:18	Car 2	Garvin	Radio activated, no transmission	
19:45:22		0:36:20	Car 303	O'Donald	Radio activated, no transmission	
19:45:46		0:36:44	Car 303	O'Donald	Radio activated, no transmission	
Channel 1						
19:45:48		0:36:46	Engine 11 Engineer	Griffin	Engineer 6, tell me when you've got water coming.	
Channel 1						
19:46:00		0:36:58	Engine 11	Johnson	Captain 11 to Battalion 4	
19:46:03		0:37:01	Battalion 4	Aytes	Go ahead	
19:46:05		0:37:03	Engine 11	Johnson	I have 19 on the corner of DuPont & 17, I can take another line if we need it.	
19:46:13		0:37:11	Car 1	Thomas	We need that line in the front door.	
19:46:13		0:37:11	Battalion 4	Aytes	I need another line for Ladder 5	
19:46:19		0:37:17	Battalion 5	Lloyd	System Watch activation, no audio	
19:46:24		0:37:22	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:46:28		0:37:26	Engine 12 Engineer	Horn	Engine 12 to Battalion 4, I can handle that line.	
19:46:33		0:37:31	Battalion 4	Aytes	That's alright, we've got it now. 13 is laying a line, the other line to it.	
19:46:37		0:37:35	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:46:42		0:37:40	Car 2	Garvin	System Watch activation, no audio	
19:46:45		0:37:43	Car 2	Garvin	System Watch activation, no audio	
19:46:51		0:37:49	Engine 3 Engineer	Witt	Engine 3 to Captain 3.	Siren in the background
Telephone						
	19:46:23	0:37:21	Dispatch	Barrineau	I'm getting CPW right now. I got it, I got it, yeah, I got it. Take care of the phone babe. I got Public Works.	
	19:46:39	0:37:37	Charleston Public Works		[ringing] Charleston Water.	
	19:46:40	0:37:38	Dispatch	Barrineau	Yes, this Operator 4 with the Charleston Fire Department. We've got one hell of a big fire on 1807 Savannah Highway, the Sofa Store and we need you guys to boost up the pressure on the water off of Wappoo Road area for the engines. They are having a heck of a time keeping pressure. Can you take care of that for us?	

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	19:46:58	0:37:56	Charleston Public Works		Yeah, I will. What is your telephone number and I'll direct line	
	19:47:02	0:38:00	Dispatch	Barrineau	577-7070. If you could boost up that pressure for them, we'd appreciate it.	
	19:47:05	0:38:03	Charleston Public Works		I'll call the plant, buddy. I'll call them right now.	
	19:47:07	0:38:05	Dispatch	Barrineau	Thank you, man. Hurry up if you can for me, Bub.	
Telephone						
	19:46:29	0:37:27	Dispatch	McIver	...One	
	19:46:31	0:37:29	Engine 7	Harriss	Yes. We are on the floor Station 13	
	19:46:33	0:37:31	Dispatch	McIver	Okay, thank you.	
	19:46:34	0:37:32	Engine 7	Harriss	Uh, huh	
	19:46:37	0:37:35	Dispatch	McIver	Charleston Fire Department. Operator 1.	
	19:46:39	0:37:37	Caller		Deanne?	
	19:46:40	0:37:38	Dispatch	McIver	Yes	
	19:46:41	0:37:39	Caller		Do we have a fire West Ashley?	
	19:46:42	0:37:40	Dispatch	McIver	Yes and we can't talk. I mean it is a major fire. Okay?	
	19:46:46	0:37:44	Caller		Where's it at?	
	19:46:47	0:37:45	Dispatch	McIver	It's 1807 Savannah Highway	
	19:46:49	0:37:47	Caller		Okay	
	19:46:50	0:37:48	Dispatch	McIver	Alright, bye. Charleston Fire Department, Operator 1.	
	19:46:55	0:37:53	Caller		Hey	
	19:46:56	0:37:54	Dispatch	McIver	Hey	
	19:46:57	0:37:55	Caller		Hey, do you all got a fire somewheres.	
	19:46:59	0:37:57	Dispatch	McIver	Yes, 1807 Savannah Highway.	
	19:47:01	0:37:59	Caller		Yes, we are sitting here on Sam Rittenburg and we see some hell of a smoke over there.	
	19:47:05	0:38:03	Dispatch	McIver	Yes, sir. And I really can't talk right now. We are extremely busy.	
	19:47:09	0:38:07	Caller		Alright	
	19:47:10	0:38:08	Dispatch	McIver	Okay, thank you.	
	19:47:14	0:38:12	Dispatch	McIver	Charleston Fire Department, Operator 1.	
	19:47:17	0:38:15	Caller		Yes. There's some big fire West of the Ashley.	
	19:47:19	0:38:17	Dispatch	McIver	Yes sir, yes sir, we are on it.	
	19:47:21	0:38:19	Caller		What is it?	
	19:47:22	0:38:20	Dispatch	McIver	Sir, all I can tell you, it's at 1807 Savannah Highway.	
	19:47:26	0:38:24	Caller		1807 Savannah Highway. Okay	
	19:47:27	0:38:25	Dispatch	McIver	Yes Sir. Alright, bye.	
Channel 2						
19:46:42		0:37:40	Engine 9 Captain	Hess	Nine to Car 11, we we're West side at #10	
Channel 1						
					Radio activated, no transmission	There are a number of activations in this period from Charleston County Sheriff Units, Engine 13 Captain, Engine 10 Captain, Ladder 5 Captain (James Richardson), Engine 13 Engineer
Channel 1						

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
					Radio activated, no transmission	There are a number of activations in this period from Charleston County Sheriff Units, Engine 13 Captain, Engine 10 Captain, Ladder 5 Captain (James Richardson), Engine 13 Engineer
Channel 1						
					Radio activated, no transmission	There are a number of activations in this period from Charleston County Sheriff Units, Engine 13 Captain, Engine 10 Captain, Ladder 5 Captain (James Richardson), Engine 13 Engineer
Channel 2						
19:47:32		0:38:30	Dispatch	Barrineau	Car 11, you still on amm, Channel 2?	
19:47:38		0:38:36	Car 11	Shriver	Car 11	
19:47:41		0:38:39	Dispatch	Barrineau	I talked to the Waterworks and they are going to be boosting up the pressure. They're trying to get somebody down there to you right now.	
19:47:47		0:38:45	Car 11	Shriver	10-4	PASS in the background
Channel 1						
					Radio activated, no transmission	There are a number of activations in this period from Charleston County Sheriff Units, Engine 13 Captain, Engine 10 Captain, Ladder 5 Captain (James Richardson), Engine 13 Engineer
Channel 1						
19:48:03		0:39:01	Engine 13	Harrison	Engine 3 go to Channel 2	
19:48:14		0:39:12	Engine 13 Engineer	Taylor	System Watch activation, no audio	
19:48:20		0:39:18	Engine 12 Suction	Henry	System Watch activation, no audio	
19:48:26		0:39:24	Engine 11 Captain	Johnson	System Watch activation, no audio	
19:48:36		0:39:34	Car 1	Thomas	Car 1 to Dispatcher	
19:48:40		0:39:38	Dispatch	Barrineau	Go ahead, Chief	
19:48:42		0:39:40	Car 1	Thomas	Alright, send me Ladder 4	PASS in the background.
19:48:44		0:39:42	Dispatch	Barrineau	10-4	
19:48:50		0:39:48	Dispatch	McIver	[dispatch tone] Dispatcher to Ladder 4, 1807 Savannah Highway, 1807 Savannah Highway, time out 19:49.	
19:49:06		0:40:04	Ladder 4	Morley	Ladder 4 is 10-8 Savannah Highway Dispatcher.	Siren in background
19:49:09		0:40:07	Dispatch	McIver	10-4, Ladder 4 19:49	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
Channel 2						
19:48:22		0:39:20	Engine 13	Harrison	Captain 13 to Engine 3 on 2	
Channel 2						
19:48:55		0:39:53	Battalion 4	Aytes	Battalion 4 to Engine 3 [inaudible] take another line	
19:48:57		0:39:55	Engine 16 Engineer	Wittner	System Watch activation, no audio	
Channel 2						
19:49:26		0:40:24	Battalion 4	Aytes	Battalion 4 to the Captain of Engine 3. Engineer 3, charge that other line	
19:49:32		0:40:30	Battalion 4	Aytes	System Watch activation, no audio	
Channel 1						
19:49:36		0:40:34	Outside Agency		Radio activated, no transmission	
Channel 2						
19:49:48		0:40:46	Engine 16 Engineer	Wittner	Engineer 16, Battalion 4	
19:49:51		0:40:49	Battalion 4	Aytes	Go ahead	
19:49:53		0:40:51	Engine 16 Engineer	Wittner	Chief, I am pushing you 250. I can't give you any more	
19:49:57		0:40:55	Battalion 4	Aytes	Did 13 just bring you that line to hook to your truck?	
19:50:02		0:41:00	Engine 16 Engineer	Wittner	Negative Chief. I still got just the single line coming off.	
19:50:07		0:41:05	Battalion 4	Aytes	Okay. I go another line coming I need you to charge.	
19:50:12		0:41:10	Engine 16 Engineer	Wittner	,,,10-4	
19:50:13		0:41:11	Battalion 4	Aytes	Battalion 4 to, umm, Captain Lee	
Channel 1						
19:50:12		0:41:10	Car 1	Thomas	[inaudible] Car 1 to Dispatcher.	
19:50:16		0:41:14	Dispatch	Barrineau	Go ahead, Chief.	
19:50:18		0:41:16	Car 1	Thomas	Call Mayor Riley at home, or his cell phone number, and tell him what we got going, and tell him we've got a bad fire at the Super Store right now.	PASS in the background.
19:50:27		0:41:25	Dispatch	Barrineau	10-4, we got you covered, we'll get him.	
19:50:35		0:41:33	Engine 19 Mobile Radio	Johnson	Engine 19 to Car 1.	
19:50:38		0:41:36	Car 1	Thomas	Go ahead	
19:50:40		0:41:38	Engine 19 Mobile Radio	Johnson	Chief, do you want us to hand stretch another line down from this hydrant. We've got about 80 pounds on it.	
19:50:46		0:41:44	Car 1	Thomas	Yes sir. We need it for Ladder 4. Where are you coming from?	
19:50:50		0:41:48	Engine 19 Mobile Radio	Johnson	Copy, Ladder 4. Got it coming Chief.	
19:50:53		0:41:51	Car 1	Thomas	I said where are you coming from?	
19:50:57		0:41:55	Engine 3 Engineer	Witt	Engine 3 to Car 1, it's on DuPont. Corner of DuPont and Savannah Highway.	
Channel 2						

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:51:10		0:42:08	Engine 9 Captain	Hess	9 to Car 1. We're at Station 10.	
19:51:16		0:42:14	Engine 13 Captain	Harrison	Back down	
19:51:23		0:42:21	Ladder 4 Mobile Radio	Morley	Ladder 4 to Dispatch on Channel 2. We're west side	
Channel 1						
19:51:23		0:42:21	Dispatch	Barrineau	Dispatch to Car 1. I got #9 at Engine 10.	
19:51:27		0:42:25	Car 1	Thomas	Alright, tell #9 I said to come to go to umm DuPont & 17, drop their hose and bring it to me for a supply line. [inaudible] bring it to me, go to DuPont and 17 hookup and bring it to me because I'm going to hook it to Ladder 4 when they get here.	PASS in the background
19:51:42		0:42:40	Dispatch	Barrineau	10-4	
Channel 2						
19:51:44		0:42:42	Engine 9 Captain	Hess	9 copies Chief	
Channel 1						
19:51:42		0:42:40	Dispatch		System Watch activation, no audio	
19:51:55		0:42:53	Car 1	Thomas	Who's in front of Morris Nissan?	
Channel 2						
19:51:54		0:42:52	Engine 9 Captain	Hess	9 to Dispatcher, we are in route	Siren in the background
19:51:59		0:42:57	Dispatch	Barrineau	10-4 babe, 19:52	
Channel 1						
19:52:06		0:43:04	Battalion 4	Aytes	Battalion 4 to Car 1.	
Channel 1						
19:52:18		0:43:16	Car 2	Garvin	Car 2 to Engine 6.	
Channel 1						
19:52:28		0:43:26	Engine 16 Captain	Benke	System Watch activation, no audio	According to Charleston Police Department radio technicians, this transmission likely occurred as this radio was being destroyed.
19:52:31		0:43:29	Car 1	Thomas	Move that aerial ladder, move it over towards the main building.	
19:52:40		0:43:38	Engine 15 Nozzle	Thomes	System Watch activation, no audio	
Channel 1						
19:53:03		0:44:01	Engine 10 Captain	Villareal	Radio activated, no transmission	
Channel 1						
19:53:17		0:44:15	Car 1	Thomas	Car 1 to Ladder 5. Can you swing your ladder over toward the main building or not?	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:53:24		0:44:22	Ladder 5 Captain	Richardson	Chief, are you talking about the building closer to Savannah Highway?	
19:53:30		0:44:28	Car 1	Thomas	Alright, stay where you're at, stay where you're at, I'll have Ladder 4 come to the front.	
19:53:35		0:44:33	Ladder 5 Captain	Richardson	Chief, if you want me to, I can get the front and Ladder 4 can maybe come off Pebble and get the back because I can't get this one too far in the back.	
19:53:43		0:44:41	Car 1	Thomas	You just keep what you got, keep what you…	
19:53:46		0:44:44	Ladder 5 Captain	Richardson	10-4, Sir.	
19:53:48		0:44:46	Battalion 4	Aytes	Car 1 [inaudible] Engine 10. I got a feeling that fire's coming towards it.	
19:53:50		0:44:48	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:53:56		0:44:54	Engine 3 Engineer	Waring	Engine 3 to Car 1.	
Channel 1						
19:54:11		0:45:09	Battalion 4	Aytes	Battalion 4 to Captain of Ladder 4	
19:54:15		0:45:13	Ladder 4 Mobile Radio	Morley	Go ahead Battalion 4	Siren in the background
19:54:17		0:45:15	Battalion 4	Aytes	Cap, I have a 2 ½ waiting on you right here in the parking lot. If you come down the road, you'll see me here, follow me and I'll back you right in there.	Siren in the background
19:54:19		0:45:17	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:54:26		0:45:24	Ladder 4 Mobile Radio	Morley	Yes sir, Chief.	Siren in the background
19:54:30		0:45:28	Engine 3 Engineer	Witt	Engine 3 to Battalion 4.	
19:54:32		0:45:30	Battalion 4	Aytes	Go ahead Engine 3.	
19:54:35		0:45:33	Engine 3 Engineer	Witt	Got St. Andrew's hooked up down here and they're coming to you with a supply line.	
19:54:42		0:45:40	Dispatch		System Watch activation, no audio	
19:54:43		0:45:41	Battalion 4	Aytes	10-4	
Channel 2						
19:54:24		0:45:22	Dispatch	Barrineau	Captain 9, how close are you, baby?	
19:54:30		0:45:28	Dispatch		System Watch activation, no audio	
19:54:33		0:45:31	Dispatch	Barrineau	Captain Engine 9	
19:54:41		0:45:39	Dispatch		System Watch activation, no audio	
19:54:50		0:45:48	Engine 13	Harrison	Captain 13 Batallion 4	
Channel 1						
19:54:47		0:45:45	Engine 10 Captain	Villareal	Radio activated, no transmission	PASS device in the background.
19:54:57		0:45:55	Engine 10 Captain	Villareal	System Watch activation, no audio	
Channel 2						
19:55:10		0:46:08	Engine 13	Harrison	Captain 13, Battalion 4	
Channel 1						
19:55:14		0:46:12	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:55:20		0:46:18	Engine 13 Captain	Harrison	Captain 13 to Battalion 4.	
19:55:23		0:46:21	Battalion 4	Aytes	Go ahead, Cap	Backup alarm I the background

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
19:55:25		0:46:23	Engine 13 Captain	Harrison	The 2 ½ line is in the parking lot waitin' on Ladder 4	
19:55:30		0:46:28	Battalion 4	Aytes	I got you, I got him.	Siren in the background.
19:55:33		0:46:31	Car 1	Thomas	Chief Buddy, tell them do not charge it until we get it hooked up.	
19:55:37		0:46:35	Battalion 4	Aytes	10-4, Chief	
19:55:38		0:46:36	Engine 13 Captain	Harrison	10-4	
19:55:40		0:46:38	Car 403	Roberts	System Watch activation, no audio	
19:55:45		0:46:43	Battalion 4	Aytes	Do not charge those lines for Ladder 4 until it's hooked up.	Maybe Shriver? Siren in the background.
19:55:49		0:46:47	Car 1	Thomas	System Watch activation, no audio	
19:55:49		0:46:47	Ladder 4 Mobile Radio	Morley	Ladder 4 to Battalion 4.	
19:55:54		0:46:52	Car 1	Thomas	Number 9, see if you can turn around down there and lay me another line to Ladder 4 down here	Siren in the background.
19:56:01		0:46:59	Battalion 4	Aytes	Captain Ladder 4 is that you coming across the red light right here?	Siren in the background.
19:56:04		0:47:02	Ladder 4 Mobile Radio	Morley	Yes, Sir, where are you at.	Siren in the background.
19:56:10		0:47:08	Engine 9 Mobile Radio	Hess	9 to Car 1	
19:56:12		0:47:10	Car 1	Thomas	Go ahead	
19:56:14		0:47:12	Engine 9 Mobile Radio	Hess	Chief, we are right here in front of Dunkin Donuts. Where do you want the line?	
19:56:16		0:47:14	Battalion 4	Aytes	See me here in the street, come on.	Siren in the background.
19:56:18		0:47:16	Car 1	Thomas	[inaudible] you are probably going to have to lay it to the pumper that's down on the corner of Wappoo & 17	Siren in the background
19:56:26		0:47:24	Engine 9 Mobile Radio	Hess	Okay, 10-4.	
19:56:28		0:47:26	Battalion 4	Aytes	[Inaudible]	
19:56:29		0:47:27	Car 1	Thomas	System Watch activation, no audio	
19:56:29		0:47:27	Ladder 4 Mobile Radio	Morley	System Watch activation, no audio	
19:56:35		0:47:33	Engine 7 Suction	Cypress	System Watch activation, no audio	
19:56:35		0:47:33	Car 1	Thomas	System Watch activation, no audio	
19:56:37		0:47:35	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:56:37		0:47:35	Car 1	Thomas	Car 1 to Dispatcher. See if you can get North Charleston to cover some of our stations downtown or Mt. Pleasant or whoever you can call.	Siren in the background
19:56:41		0:47:39	Outside Agencies		System Watch activation, no audio	
19:56:45		0:47:43	Dispatch	McIver	That's affirmative, Chief. North Charleston's going to go to Comings Street.	
19:56:47		0:47:45	Battalion 3	Ackerman	System Watch activation, no audio	
19:56:50		0:47:48	Car 1	Thomas	10-4, See if you can get James Island to go down to the station or downtown and also Mount Pleasant.	
19:56:57		0:47:55	Dispatcher	McIver	10-4	
Channel 2						
19:55:40		0:46:38	Dispatch	Barrineau	Dispatcher to Captain 9 where you at?	
Telephone						

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
	19:57:02	0:48:00	St. Andrews Fire Department		[ringing] St. Andrews Dispatch	
	19:57:08	0:48:06	Dispatch	McIver	Hey, can y'all go over and cover some of our stations West Ashley?	
	19:57:12	0:48:10	St. Andrews Fire Department		No, ma'am.	
	19:57:13	0:48:11	Dispatch	McIver	You can't?	
	19:57:14	0:48:12	St. Andrews Fire Department		You know why I am saying that? No, all of our stations are out. I just called North Charleston and St. John's to try to cover us.	
	19:57:20	0:48:18	Dispatch	McIver	Oh, jeese. Okay.	
	19:57:21	0:48:19	St. Andrews Fire Department		All our units are out.	
	19:57:21	0:48:19	Dispatch	McIver	Okay. Thank you.	
	19:57:22	0:48:20	St. Andrews Fire Department		Sorry about that.	
	19:57:24	0:48:22	Dispatch	McIver	That's okay. Negative, all I got was an answering machine and I left a message. Whatever	
Channel 1						
19:57:08		0:48:06	Engine 10 Captain	Villareal	Radio activated, no transmission	
Channel 1						
19:57:20		0:48:18	Car 1	Thomas	Car 1, dispatcher, did you get in touch with the Mayor?	
19:57:24		0:48:22	Dispatch	McIver	Negative, all I got was his answering machine. I left a message.	
19:57:31		0:48:29	Engine 13 Captain	Harrison	Captain 13 to Ladder 4, let me know when you are ready for that line to be charged	
19:57:36		0:48:34	Car 1	Thomas	I'll let you know, Lee. Just hold on. I'll let you know.	
Telephone						
	19:57:56	0:48:54	Dispatch	McIver	North Charleston going to Coming Street	
	19:58:02	0:49:00	Mt Pleasant FD		Communications	
	19:58:04	0:49:02	Dispatch	McIver	Hey, this is the City of Charleston Fire Department.	
	19:58:06	0:49:04	Mt Pleasant FD		Uh, huh.	
	19:58:07	0:49:05	Dispatch	McIver	Um, can ya'll cover some of our units for us? Are ya'll…	
	19:58:11	0:49:09	Mt Pleasant FD		In reference to?	
	19:58:13	0:49:11	Dispatch	McIver	Well, we have got a major fire West Ashley.	
	19:58:16	0:49:14	Mt Pleasant FD		Oh, you mean a fire. Um, OK, umm, so did you all do a, umm, did ya'll do a page? Did ya'll page it out throughout the fire department?	
	19:58:28	0:49:26	Dispatch	McIver	No, no, I didn't do that. I, my, my Chief just asked me to, umm, to call and see if ya'll could cover some of our units cause, I mean, we don't have, we have nothing left.	
	19:58:40	0:49:38	Mt Pleasant FD		Okay, okay, cover what area?	
	19:58:42	0:49:40	Dispatch	McIver	Um, alright, let me see, umm, like umm, engine 9's area. Do they know where engine 9 is?	
	19:58:51	0:49:49	Mt Pleasant FD		Well, can you give me that.	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
	19:58:52	0:49:50	Dispatch	McIver	King and Heriot. Oh, gosh.	
	19:58:59	0:49:57	Mt Pleasant FD		Okay, King and Heriot.	
	19:59:00	0:49:58	Dispatch	McIver	Um, alright let me see. Um,	
	19:59:06	0:50:04	Mt Pleasant FD		Well how about this. How about I call my Batt Chief and tell him to call you directly.	
	19:59:09	0:50:07	Dispatch	McIver	Okay, that will be fine.	
	19:59:11	0:50:09	Mt Pleasant FD		What is your number?	
	19:59:12	0:50:10	Dispatch	McIver	577-7070	
	19:59:15	0:50:13	Mt Pleasant FD		Okay	
	19:59:16	0:50:14	Dispatch	McIver	Thank you.	
	19:59:16	0:50:14	Mt Pleasant FD		Alright, bye bye.	
	19:59:17	0:50:15	Dispatch	McIver	Bye	
Channel 1						
19:57:56		0:48:54	Battalion 6	Nielson	Battalion 6 to Car 1. Engine 7 is heading to #11. If you need him, call him.	
Channel 1						
19:58:13		0:49:11	Car 2	Garvin	System Watch activation, no audio	
19:58:17		0:49:15	Engine 19 Acting Engineer	Johnson	Engine 19 to Battalion, Car 1.	
19:58:21		0:49:19	Car 1	Thomas	Go ahead	
19:58:22		0:49:20	Battalion 4	Aytes	…Car One	
19:58:23		0:49:21	Engine 19 Acting Engineer	Johnson	Chief, umm, is St. Andrew's hooked up? I'm ready to charge the supply line [inaudible} have it hooked up.	Johnson?
19:58:29		0:49:27	Car 1	Thomas	Where's that line going to?	
19:58:29		0:49:27	Battalion 4	Aytes	Battalion 4 to Car 1, Chief do you need a second line for Ladder 4?	
19:58:35		0:49:33	Battalion 4	Aytes	System Watch activation, no audio	
19:58:38		0:49:36	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:58:41		0:49:39	Car 1	Thomas	#9's going to lay to me, #9's supposed to be laying to me.	
19:58:45		0:49:43	Battalion 4	Aytes	I got a line coming down the street and they weren't sure where it was coming, do you need one coming?	
19:58:50		0:49:48	Car 1	Thomas	I need one to Ladder 4 if they can get it to me	
19:58:55		0:49:53	Battalion 4	Aytes	Chief, they're coming to where you are right now.	
19:58:57		0:49:55	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:58:59		0:49:57	Engine 13	Harrison	13 to Car 1	
19:59:00		0:49:58	Outside Agencies		System Watch activation, no audio	
19:59:11		0:50:09	Engine 13	Harrison	13 to Car 1	
Telephone						
	19:58:53	0:49:51	City Dispatch		[ringing] City Dispatch	
	19:58:44	0:49:42		Mayor Riley	Hi, this is Mayor Riley. How are you?	
	19:58:57	0:49:55	City Dispatch		I'm fine, sir. How are you doing?	
	19:58:59	0:49:57		Mayor Riley	I am fine. I just got in and got a call about the Sofa Super Store.	
	19:59:03	0:50:01	City Dispatch		Yes, sir.	
	19:59:04	0:50:02		Mayor Riley	How are things going?	

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	19:59:05	0:50:03	City Dispatch		Um, right now, um they are trying to out the fire. It's in full gulf. I am answering the phone for the Fire Department because they are sort of kind of busy over there. We got a lot of units on scene and the fire trucks and I think there were two parties inside but they got one out but I'm not sure about the other party cause they wasn't able to answer my question when I was talking to them so…	
	19:59:22	0:50:20		Mayor Riley	Okay	Sound of children in the background
	19:59:23	0:50:21	City Dispatch		That's about all I know right now.	
	19:59:27	0:50:25		Mayor Riley	Okay, alrighty, well, thank you.	
	19:59:28	0:50:26	City Dispatch		You're welcome, sir.	
	19:59:29	0:50:27		Mayor Riley	If, ahh, if you hear anything, if you would call me at XXX-XXXX.	Number deleted by Kevin Roche during transript preparation
	19:59:33	0:50:31	City Dispatch		Okay.	
	19:59:34	0:50:32		Mayor Riley	Thanks a lot.	
	19:59:35	0:50:33	City Dispatch		Alright, Sir. Bye, bye.	
Channel 2						
19:58:53		0:49:51	Engine 7	Harriss	Engine 7 to Dispatcher, Channel 2, we are in route Station 11	
Channel 2						
19:59:20		0:50:18	Charleston County Sheriff's Office		Radio activated, no transmission	
Channel 1						
19:59:23		0:50:21	Engine 13 Captain	Harrison	13, Car 2	
19:59:27		0:50:25	Car 11	Shriver	Go ahead 13	
19:59:30		0:50:28	Engine 13 Captain	Harrison	We're working on your second line for Ladder 4. We've almost got it.	
19:59:32		0:50:30	Engine 10 Captain	Villareal	System Watch activation, no audio	
19:59:36		0:50:34	Car 11	Shriver	10-4	
Telephone						
	19:59:28	0:50:26	Dispatch	Barrineau	[unaudible] Yeah.	
	19:59:29	0:50:27	Battalion 6	Nielson	Geno, I'm sending 7 to 11.	
	19:59:32	0:50:30	Dispatch	Barrineau	7 to 11, okay.	
	19:59:33	0:50:31	Battalion 6	Nielson	Just let James Island know if you got a call, let them take the calls. Okay?	
	19:59:37	0:50:35	Dispatch	Barrineau	Okay.	
	19:59:38	0:50:36	Battalion 6	Nielson	Thank you	
	19:59:39	0:50:37	Dispatch	Barrineau	Got you baby	
	19:59:40	0:50:38	Battalion 6	Nielson	Yes sir.	
	19:59:41	0:50:39	Dispatch	Barrineau	Bye, bye.	
Telephone						
	19:59:56	0:50:54	Dispatch	Barrineau	[dial tone] 7 to 11	
	19:59:56	0:50:54	James Island Fire Department		[ringing] James Island Fire Department	
	20:00:03	0:51:01	Dispatch	Barrineau	Hey, Buddy. This is Operator 4, Geno.	

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	20:00:05	0:51:03	James Island Fire Department		Yeah	
	20:00:06	0:51:04	Dispatch	Barrineau	Do me a favor. Umm, we've got 7 going to 11. We've got a big fire on Savannah Highway.	
	20:00:09	0:51:07	James Island Fire Department		Yeah, I've been hearing.	
	20:00:10	0:51:08	Dispatch	Barrineau	Do me a favor. Whose this, Willie?	
	20:00:11	0:51:09	James Island Fire Department		No, this is Terry.	
	20:00:12	0:51:10	Dispatch	Barrineau	Terry, do me a favor. This is Captain Geno.	
	20:00:13	0:51:11	James Island Fire Department		Yes, Sir.	
	20:00:15	0:51:13	Dispatch	Barrineau	Anything West of the Ashley, James Island area, over that way.	
	20:00:18	0:51:16	James Island Fire Department		Yes, Sir.	
	20:00:18	0:51:16	Dispatch	Barrineau	Take it for us.	
	20:00:19	0:51:17	James Island Fire Department		Okay. I've talked to our 101 and [inaudible]	
	20:00:22	0:51:20	Dispatch	Barrineau	Yeah, just cover for us, doll baby. We appreciate it. That's one we owe you.	
	20:00:25	0:51:23	James Island Fire Department		We got you.	
	20:00:26	0:51:24	Dispatch	Barrineau	Thank you, darling. We appreciate it. Love you, man.	
	20:00:28	0:51:26	James Island Fire Department		Bye	
	20:00:28	0:51:26	Dispatch	Barrineau	Bye, bye.	
	20:00:31	0:51:29	Dispatch	Barrineau	[inaudible] take West I, I mean James Island. Yes, Charleston Fire.	
	20:00:35	0:51:33	Mount Pleasant Battalion Chief	Timms	Hey, Chief. It's Chief Timms of Mount Pleasant. What do ya'll need?	
	20:00:37	0:51:35	Dispatch	Barrineau	Okay, hold on. We've got the Chief from over there in Mount Pleasant. Where do you need him at?. We've got James Island taking care of [woman in background saying: West Ashley and James Island. King & Heriot) Hold on James. .	
	20:00:49	0:51:47	Mount Pleasant Battalion Chief	Timms	Okay	
	20:00:52	0:51:50	Dispatch	Barrineau	We need somebody at King & Heriott, Chief.	
	20:00:54	0:51:52	Mount Pleasant Battalion Chief	Timms	King & Harriett station?	
	20:00:55	0:51:53	Dispatch	Barrineau	Yeah, we need somebody at that one, yeah, that's number 9.	
	20:00:58	0:51:56	Mount Pleasant Battalion Chief	Timms	Alright, I've got Engine 3 headed to you.	
	20:01:00	0:51:58	Dispatch	Barrineau	Okay	
	20:01:00	0:51:58	Mount Pleasant Battalion Chief	Timms	Alright	
	20:01:01	0:51:59	Dispatch	Barrineau	Thank you so much, Chief. We appreciate it. Alright, we're good for right now.	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
	20:01:05	0:52:03	Mount Pleasant Battalion Chief	Timms	Okay, that's good.	
	20:01:06	0:52:04	Dispatch	Barrineau	Thank you very much. Yes, Sir.	
Telephone						
	20:00:03	0:51:01			[ringing]	
	20:00:31	0:51:29	Dispatch	Barrineau	[inaudible] take West I, I mean James Island. Yes, Charleston Fire.	
	20:00:35	0:51:33	Mount Pleasant Battalion Chief	Timms	Hey, Chief. It's Chief Timms of Mount Pleasant. What do ya'll need?	
	20:00:37	0:51:35	Dispatch	Barrineau	Hold on. We've got the Chief from over there in Mount Pleasant. Where do you need him at?. We've got James Island taking care of [woman in background saying: West Ashley and James Island. King & Harriott) Hold on James. .	
	20:00:49	0:51:47	Mount Pleasant Battalion Chief	Timms	Okay	
	20:00:52	0:51:50	Dispatch	Barrineau	We need somebody at King & Harriett, Chief.	
	20:00:54	0:51:52	Mount Pleasant Battalion Chief	Timms	King & Harriett station?	
	20:00:55	0:51:53	Dispatch	Barrineau	Yeah, we need somebody at that one, yeah, that's number 9.	
	20:00:58	0:51:56	Mount Pleasant Battalion Chief	Timms	Alright, I've got Engine 3 headed to you.	
	20:01:00	0:51:58	Dispatch	Barrineau	Okay	
	20:01:00	0:51:58	Mount Pleasant Battalion Chief	Timms	Alright	
	20:01:01	0:51:59	Dispatch	Barrineau	Thank you so much, Chief. We appreciate it. Alright, we're good for right now.	
	20:01:05	0:52:03	Mount Pleasant Battalion Chief	Timms	Okay, that's good.	
	20:01:06	0:52:04	Dispatch	Barrineau	Thank you very much. Yes, Sir.	
	20:01:10	0:52:08	Mount Pleasant Battalion Chief	Timms	[inaudible] …to Engine 3	
Channel 1						
20:00:18		0:51:16			Radio activated, no transmission	There were several activations during this period from Ladder 4 Ladderman 1, Engine 12 Nozzle, and an outside agency.
Channel 1						
20:00:42		0:51:40			Radio activated, no transmission	There were several activations during this period from Ladder 4 Ladderman 1, Engine 12 Nozzle, and an outside agency.

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
Channel 2						
20:00:44		0:51:42	Engine 9 Captain	Hess	9 to 3, water's coming.	
Channel 1						
20:01:04		0:52:02	Engine 12 Engineer	Horn	Engineer 12 to Captain 13	
20:01:07		0:52:05	Engine 13 Captain	Harrison	Go ahead	
20:01:08		0:52:06	Engine 12 Engineer	Horn	We're ready to charge the line	
20:01:09		0:52:07	Battalion 3	Ackerman	System Watch activation, no audio	
20:01:13		0:52:11	Engine 13 Captain	Harrison	Repeat	
20:01:16		0:52:14	Engine 12 Engineer	Horn	We hooked another line, pulled off of 13, where's it going to?	
20:01:22		0:52:20	Engine 13 Captain	Harrison	Is that the second line?	
20:01:25		0:52:23	Engine 12 Engineer	Horn	That's affirmative	
20:01:26		0:52:24	Ladder 4 Ladderman 1	Turner	System Watch activation, no audio	
20:01:26		0:52:24	Car 1	Thomas	13, did you lay the line?	
20:01:28		0:52:26	Engine 13 Captain	Harrison	System Watch activation, no audio	
20:01:28		0:52:26	Car 1	Thomas	Are you ready to charge the line?	
20:01:34		0:52:32	Engine 19 Mobile Radio	Johnson	19 to Truck 4 are you ready for me to charge this supply line?	
20:01:38		0:52:36	Car 1	Thomas	That's affirmative, if you've got it going to Ladder 4, charge it. 13 have you already charged yours?	
20:01:44		0:52:42	Engine 19 Mobile Radio	Johnson	Water's coming.	
20:01:44		0:52:42	Engine 13 Captain	Harrison	System Watch activation, no audio	
20:01:46		0:52:44	Car 1	Thomas	Alright, 10-4, Give me about 250 pounds	
20:01:46		0:52:44	Engine 13 Captain	Harrison	System Watch activation, no audio	
20:01:52		0:52:50	Engine 9 Captain	Hess	9 to 13 if you need more water, I'm hooked to a hydrant	
20:01:53		0:52:51	Engine 13 Captain	Harrison	[inaudible] go ahead and charge both lines.	
20:01:59		0:52:57	Engine 12 Engineer	Horn	System Watch activation, no audio	
20:02:00		0:52:58	Engine 3 Engineer	Witt	9 you calling me?	
20:02:03		0:53:01	Engine 9 Captain	Hess	10-4. We've got water coming to you.	
20:02:07		0:53:05	Engine 3 Engineer	Witt	10-4, Captain	
20:02:13		0:53:11	Engine 19 Mobile Radio	Johnson	19 to truck 4 you got water	
20:02:20		0:53:18	Car 303	O'Donald	[inaudible] one hooked to the 4 ½, charge it	
20:02:30		0:53:28	Battalion 4	Aytes	System Watch activation, no audio	
20:02:37		0:53:35	Car 11	Shriver	Car 11 to Captain Louis Mulkey	
Telephone						
	20:01:40	0:52:38	Dispatch	Barrineau	[ringing] Charleston Fire, Operator 4, how can I help you?	
	20:02:00	0:52:58	Summerville Fire Department	Haydon	Yeah, this is Captain Haydon of the Summerville Fire Department.	
	20:02:02	0:53:00	Dispatch	Barrineau	Yes, Sir.	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
	20:02:03	0:53:01	Summerville Fire Department	Haydon	Uh, our Chief wanted us to call ya'll and find out if there is anything we might be able to send down that way.	
	20:02:08	0:53:06	Dispatch	Barrineau	Yeah, if you hold on for me one minute, Chief.	
	20:02:09	0:53:07	Summerville Fire Department	Haydon	Okay	
	20:02:09	0:53:07	Dispatch	Barrineau	Got Summerville, where do we need another pumper at? I've got Summerville. Where do we need another pumper at? We've got one at 9, we've got somebody, we've got North Charleston at 15. No I've got North Charleston at 15 right now. How about let's send somebody to ahh, 8?	
	20:02:30	0:53:28	Summerville Fire Department	Haydon	I know where 8 is, I know that district.	
	20:02:32	0:53:30	Dispatch	Barrineau	8's home? How about let's send West Ashley then. We'll send them to 10. Hey, Chief.	
	20:02:38	0:53:36	Summerville Fire Department	Haydon	Yeah?	
	20:02:38	0:53:36	Dispatch	Barrineau	Could you send one of them to #10 which is right down the road from where the fire is	
	20:02:43	0:53:41	Summerville Fire Department	Haydon	I know where that is.	
	20:02:44	0:53:42	Dispatch	Barrineau	on Highway 17 by Nicholson.	
	20:02:45	0:53:43	Summerville Fire Department	Haydon	Okay. How about our Rehab tent or anything like that to help out, it's air conditioned anything to help out on the scene?	
	20:02:51	0:53:49	Dispatch	Barrineau	That would be great. That would be great, Chief. This is from Summerville, right	
	20:02:54	0:53:52	Summerville Fire Department	Haydon	Right.	
	20:02:54	0:53:52	Dispatch	Barrineau	Okay. If you could send, if you could send somebody to Engine 10 and then the relief truck.	
	20:03:00	0:53:58	Summerville Fire Department	Haydon	Okay. We'll do it.	
	20:03:01	0:53:59	Dispatch	Barrineau	Okay	
	20:03:03	0:54:01	Summerville Fire Department	Haydon	Alriight, we'll have somebody in route in just a minute.	
	20:03:04	0:54:02	Dispatch	Barrineau	Yeah, yeah, send them, the relief truck – you said it's got air, O2 and everything?	
	20:03:09	0:54:07	Summerville Fire Department	Haydon	Umm	
	20:03:09	0:54:07	Dispatch	Barrineau	What's it got on it?	
	20:03:11	0:54:09	Summerville Fire Department	Haydon	Well, we've got a light and air truck if you need it where we can fill cascade, you know, we can fill the air packs. We can do that.	
	20:03:16	0:54:14	Dispatch	Barrineau	Okay. That would be fabulous. I know we got an air truck. I don't even think it's out there but I don't think we've got anybody that can bring it right now.	
	20:03:24	0:54:22	Summerville Fire Department	Haydon	Okay	
	20:03:25	0:54:23	Dispatch	Barrineau	So if ya'll could do that, it would be fabulous. Summerville Fire Department, that's great. And go to #10 and just stand by for us. We'd appreciate it.	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
	20:03:33	0:54:31	Summerville Fire Department	Haydon	Okay, then.	
	20:03:34	0:54:32	Dispatch	Barrineau	Thanks, Chief. Bye, bye.	
	20:03:35	0:54:33	Summerville Fire Department	Haydon	Bye	
Telephone						Duplicate of the conversation above, different recorded line
	20:01:53	0:52:51	Dispatch	Barrineau	[ringing] Charleston Fire, Operator 4, how can I help you?	
	20:02:00	0:52:58	Summerville Fire Department	Haydon	Yeah, this is Captain Haydon of the Summerville Fire Department.	
	20:02:02	0:53:00	Dispatch	Barrineau	Yes, Sir.	
	20:02:03	0:53:01	Summerville Fire Department	Haydon	Uh, our Chief wanted us to call ya'll and find out if there is anything we might be able to send down that way.	
	20:02:08	0:53:06	Dispatch	Barrineau	Yeah, if you hold on for me one minute, Chief.	
	20:02:09	0:53:07	Summerville Fire Department	Haydon	Okay	
	20:02:09	0:53:07	Dispatch	Barrineau	Got Summerville, where do we need another pumper at? I've got Summerville. Where do we need another pumper at? We've got one at 9, we've got somebody, we've got North Charleston at 15. No I've got North Charleston at 15 right now. How about let's send somebody to ahh, 8?	
	20:02:30	0:53:28	Summerville Fire Department	Haydon	I know where 8 is, I know that district.	
	20:02:32	0:53:30	Dispatch	Barrineau	8's home? How about let's send West Ashley then. We'll send them to 10. Hey, Chief.	
	20:02:38	0:53:36	Summerville Fire Department	Haydon	Yeah?	
	20:02:38	0:53:36	Dispatch	Barrineau	Could you send one of them to #10 which is right down the road from where the fire is	
	20:02:43	0:53:41	Summerville Fire Department	Haydon	I know where that is.	
	20:02:44	0:53:42	Dispatch	Barrineau	on Highway 17 by Nicholson.	
	20:02:45	0:53:43	Summerville Fire Department	Haydon	Okay. How about our Rehab tent or anything like that to help out, it's air conditioned anything to help out on the scene?	
	20:02:51	0:53:49	Dispatch	Barrineau	That would be great. That would be great, Chief. This is from Summerville, right	
	20:02:54	0:53:52	Summerville Fire Department	Haydon	Right.	
	20:02:54	0:53:52	Dispatch	Barrineau	Okay. If you could send, if you could send somebody to Engine 10 and then the relief truck.	
	20:03:00	0:53:58	Summerville Fire Department	Haydon	Okay. We'll do it.	
	20:03:01	0:53:59	Dispatch	Barrineau	Okay	
	20:03:03	0:54:01	Summerville Fire Department	Haydon	Alriight, we'll have somebody in route in just a minute.	
	20:03:04	0:54:02	Dispatch	Barrineau	Yeah, yeah, send them, the relief truck – you said it's got air, O2 and everything?	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
	20:03:09	0:54:07	Summerville Fire Department	Haydon	Umm	
	20:03:09	0:54:07	Dispatch	Barrineau	What's it got on it?	
	20:03:11	0:54:09	Summerville Fire Department	Haydon	Well, we've got a light and air truck if you need it where we can fill cascade, you know, we can fill the air packs. We can do that.	
	20:03:16	0:54:14	Dispatch	Barrineau	Okay. That would be fabulous. I know we got an air truck. I don't even think it's out there but I don't think we've got anybody that can bring it right now.	
	20:03:24	0:54:22	Summerville Fire Department	Haydon	Okay	
	20:03:25	0:54:23	Dispatch	Barrineau	So if ya'll could do that, it would be fabulous. Summerville Fire Department, that's great. And go to #10 and just stand by for us. We'd appreciate it.	
	20:03:33	0:54:31	Summerville Fire Department	Haydon	Okay, then.	
	20:03:34	0:54:32	Dispatch	Barrineau	Thanks, Chief. Bye, bye.	
	20:03:35	0:54:33	Summerville Fire Department	Haydon	Bye	
Channel 1						
20:02:53		0:53:51	Dispatch	McIver	Dispatcher to Car 1, have you got enough water pressure? I have the Waterworks on the land line.	
20:02:55		0:53:53	Battalion 4	Aytes	System Watch activation, no audio	
20:03:00		0:53:58	Car 1	Thomas	Dispatcher, if they can give us some, okay. If they can't, don't worry about it.	
20:03:04		0:54:02	Dispatch	McIver	10-4	
Channel 1						
20:03:13		0:54:11	Battalion 4	Aytes	Battalion 4 Car 1. St. Andrew's just got their umm, aerial up on Pebble Road.	
20:03:24		0:54:22	Car 403	Roberts	[inaudible]	
20:03:26		0:54:24				Private call from Car 11 to BC3.
20:03:35		0:54:33				Private call from BC3 to Car 11.
Channel 1						
20:03:46		0:54:44	Battalion 4	Aytes	Battalion 4 Car 1.	
Channel 1						
20:04:00		0:54:58	Dispatch	Barrineau	Dispatcher to any Chief go to Channel 2 for me, I've got information for one of y'all.	
20:04:00		0:54:58				Private call from Car 11 to BC3.
20:04:06		0:55:04				Private call from BC3 to Car 11.
20:04:12		0:55:10				Private call from Car 11 to BC3.
Channel 2						
20:04:07		0:55:05	Battalion 4	Aytes	Go ahead, Geno, what you got?	
20:04:09		0:55:07	Car 1	Thomas	Go ahead. This is Car 1.	PASS device in the background.

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
20:04:14		0:55:12	Battalion 4	Aytes	Chief, I just talked to man at SCE&G's dispatch who says there is no gas to any three of those buildings.	
20:04:21		0:55:19	Car 1	Thomas	10-4, Captain Geno. Was it you giving me a message?	
20:04:23		0:55:21	Dispatch	Barrineau	That's affirmative. I got the Waterworks called, they supposed to be boosting up the pressure, I got Summerville Fire Department coming down to Engine 10 with a relief truck and a pumper. I got North Charleston at Coming Street. And I got the closest unit I got engine 7 going to #11. and Mt. Pleasant's going to #9.	
20:04:40		0:55:38	Car 1	Thomas	Alright, 10-4. Just keep it coming. That's all.	
20:04:43		0:55:41	Dispatch	Barrineau	10-4	
Channel 1						
20:04:28		0:55:26	Engine 10 Engineer	Butler	Engine 12	
Channel 1						
20:04:37		0:55:35	Engine 10 Engineer	Butler	You hold that water right there.	
20:04:41		0:55:39				Private call to BC3 from Car 11.
20:04:44		0:55:42	Car 602	Winn	602 to Car 1	
20:04:46		0:55:44	Ladder 4 Engineer	Land	System Watch activation, no audio	
20:04:52		0:55:50	St. Andrews Engine 4		St. Andrew's Engine 4 on the City [inaudible]	
20:04:55		0:55:53	Car 1	Thomas	Car 1 to the umm, to the bucket of Ladder 4. Anthony move it over to your right, [inaudible] to your right. In the middle of the building, Anthony. [inaudible] To your right in the middle of the building. Shoot it down.	
20:04:56		0:55:54	Car 602	Winn	System Watch activation, no audio	
20:05:15		0:56:13	Engine 3 Captain	Waring	Captain 3 to Car 1, just wanted to let you know the roof has fallen in the center	
20:05:23		0:56:21	Car 11	Shriver	System Watch activation, no audio	
20:05:24		0:56:22	Car 1	Thomas	Go ahead whoever's calling Car 1	
20:05:28		0:56:26	Engine 9 Engineer	Seabrook	System Watch activation, no audio	
20:05:29		0:56:27	Car 602	Winn	System Watch activation, no audio	
20:05:31		0:56:29	Car 1	Thomas	Anthony, can you extend it on out and get over it some more?	PASS device in the background.
20:05:32		0:56:30	Engine 3 Captain	Waring	System Watch activation, no audio	
20:05:41		0:56:39	Car 1	Thomas	Shoot it straight down, shoot it straight down when you get on top of it. That's right. Now work it to your right. Keep on going as long as you are safe.	
20:05:47		0:56:45	Battalion 5	Lloyd	Battalion 5 to Ladder 5.	
20:05:54		0:56:52	Battalion 5	Lloyd	System Watch activation, no audio	
20:05:59		0:56:57	Ladder 5 Captain	Richardson	Go ahead	
20:06:02		0:57:00	Battalion 5	Lloyd	Put that line, put those lines on the back warehouse starting from the back, from the back. We already got four in the front.	
20:06:09		0:57:07	Ladder 5 Captain	Richardson	10-4. I don't have much pressure to reach too far but I'll put it back on it.	
20:06:18		0:57:16	Ladder 5 Captain	Richardson	Battalion 5. See if they can lay me another line if they have the line, and the pressure to lay me another line.	
20:06:28		0:57:26	Car 1	Thomas	[inaudible]	
20:06:30		0:57:28	Engine 9 Captain	Hess	System Watch activation, no audio	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
20:06:34		0:57:32	Ladder 4 Captain	Morley	Ladder 4 to Car 1.	
20:06:37		0:57:35	Car 1	Thomas	Alright, Captain, go ahead.	
20:06:39		0:57:37	Ladder 4 Captain	Morley	Can we get that other line charged so we can get this other nozzle going?	
20:06:44		0:57:42	Car 1	Thomas	10-4. I'll try.	
Channel 1						
20:07:03		0:58:01	Car 403	Roberts	403 to Ladder 4	
20:07:07		0:58:05	Ladder 4 Captain	Morley	Go ahead	
20:07:09		0:58:07	Car 403	Roberts	Captain, can you shut your lines down for one second?	
20:07:19		0:58:17	Engine 15 Suction	Walker	System Watch activation, no audio	
20:07:20		0:58:18	Car 1	Thomas	Anthony, we're trying to get the line layed now, we're trying to get it to you, opening up the other nozzle now, just keep that nozzle in the middle.	PASS device in the background.
20:07:30		0:58:28	Ladder 4 Captain	Morley	It's coming right up this wall, Chief.	
Telephone						
	20:07:14	0:58:12	Dispatch	McIver	One	
	20:07:14	0:58:12	Battalion 3	Ackerman	Is North Charleston sending us a unit?	
	20:07:17	0:58:15	Dispatch	McIver	Do what?	
	20:07:18	0:58:16	Battalion 3	Ackerman	Is North Charleston sending us a unit?	
	20:07:19	0:58:17	Dispatch	McIver	Yes	
	20:07:20	0:58:18	Battalion 3	Ackerman	Mount Pleasant sending one also?	
	20:07:20	0:58:18	Dispatch	McIver	Mount Pleasant is, umm, going to #9.	
	20:07:27	0:58:25	Battalion 3	Ackerman	Okay	
	20:07:27	0:58:25	Dispatch	McIver	Um, James Island is going to cover West Ashley and James Island for us.	
	20:07:31	0:58:29	Battalion 3	Ackerman	Okay	
	20:07:32	0:58:30	Dispatch	McIver	Summerville is sending one to #10. 7 is at 11.	
	20:07:35	0:58:33	Battalion 3	Ackerman	Thank you very much.	
	20:07:36	0:58:34	Dispatch	McIver	Okay. Alright. Goodbye.	
Channel 1						
20:07:52		0:58:50	Engine 12 Suction	Henry	Radio activated, no transmission	
Channel 1						
20:08:12		0:59:10	Car 1	Thomas	Chief Buddy, you got it covered around there?	PASS device in the background.
20:08:16		0:59:14	Battalion 4	Aytes	Come back, Chief. I've got St. Andrew's backing another one down in down here at Pebble and I've got the aerial up there and doesn't have much pressure, Ladder 5 doesn't either.	
20:08:20		0:59:18	Charleston County Sheriff's Office		System Watch activation, no audio	
20:08:25		0:59:23	Car 1	Thomas	Ladder 4's got pretty good pressure on one line. Lay as many as we can get.	
20:08:30		0:59:28	Battalion 4	Aytes	Yeah, I got three hand lines back on Pebble and I've got St. Andrew's backing another truck on the side of this field. Ladder 5 doesn't have much.	
20:08:31		0:59:29	Engine 10 Captain	Villareal	System Watch activation, no audio	
20:08:31		0:59:29	Engine 10 Engineer	Butler	System Watch activation, no audio	

System Watch Corrected Time	Corrected Time if no System Watch	Time Since Incident Dispatch	Unit or Location	Name	Spoken Words	Comments
20:08:38		0:59:36	Car 1	Thomas	10-4	
20:08:43		0:59:41	Car1	Thomas	Alright, can you use one of those hand lines [inaudible] can we use it?	
20:08:52		0:59:50	Battalion 4	Aytes	When St. Andrew's comes back down to here [inaudible] ...to Ladder 5, we'll use it.	
20:08:59		0:59:57	Ladder 4 Captain	Morley	Ladder 4 to Car 1	
20:09:05		1:00:03	Car 1	Thomas	Go ahead	
Telephone						
	20:08:58	0:59:56	Dispatch	Barrineau	[ringing] I'm getting the Waterworks again. [ringing]	
	20:09:11	1:00:09	Charleston Public Works		Charleston Water.	
	20:09:12	1:00:10	Dispatch	Barrineau	Hey, partner. This is Operator 4 again. Did anybody ever boost up the pressure?	
	20:09:15	1:00:13	Charleston Public Works		They did. I called and talked to one of your colleagues.	
	20:09:18	1:00:16	Dispatch	Barrineau	We need some more pressure. They are still complaining about some more water. Is there anyway we can get anymore pressure built up?	
	20:09:23	1:00:21	Charleston Public Works		Like I said, I just now talked to one of your colleagues.	
	20:09:25	1:00:23	Dispatch	Barrineau	Uh, huh.	
	20:09:26	1:00:24	Caller		She said it was okay but they need a little more pressure.	
	20:09:29	1:00:27	Dispatch	Barrineau	Yes.	
	20:09:30	1:00:28			I told the guys at the plant and they said they are going to try to pull them up a little more.	
	20:09:32	1:00:30	Dispatch	Barrineau	Well if you could please do it for us, we'd appreciate it immensely. Okay?	
	20:09:34	1:00:32	Charleston Public Works		[inaudible.]	
	20:09:35	1:00:33	Dispatch	Barrineau	Thank you for all your cooperation.	
	20:09:37	1:00:35	Charleston Public Works		Thank you.	
	20:09:37	1:00:35	Dispatch	Barrineau	Thank you.	
	20:09:38	1:00:36	Charleston Public Works		Alright	
	20:09:38	1:00:36	Dispatch	Barrineau	Goodbye.	
	20:09:43	1:00:41	Dispatch	Barrineau	Car 11. Batallion 4 are you on 2?	
	20:09:56	1:00:54	Dispatch	Barrineau	[phone ringing] Charleston Fire, Operator 4	
Channel 1						
20:09:29		1:00:27	Car 11	Shriver	Car 11 to Captain Louis Mulkey	

Appendix C – Unit Summaries

Car 1

Fire Chief

Times:

19:12:31 – Tells Engine 15 to continue to their standby at Fire Station 11
19:14:45 – Directs Engine 6 to stand by at Fire Station 10 and has Engine 19 dispatched to the fire
19:15:31 – Directs Dispatch to ask Saint Andrews Fire Department to cover calls in West Ashley
19:16:32 – On the scene
19:17:25 – Orders Engine 12 to give a supply line to Engine 10
19:19:12 – Orders Engine 6 to respond to the scene
19:19:33 – Requests the power company
19:23:09 – Asks Assistant Chief about interior conditions
19:24:29 – Series of transmissions to Engine 12 Engineer regarding supply line pressure
19:26:40 – Advised by Dispatch of a civilian trapped in the building
19:27:55 – Advises Assistant Chief that he has a stacked tip working in the warehouse
19:31:11 – Requests Engine 3 to the scene to supply Ladder 5 and later provides instructions
19:33:01 – First transmission to Assistant Chief regarding firefighter in distress
19:34:47 – First order to vacate the building
19:35:47 – First call asking for Captain 15
19:37:02 – Call for an additional fire company to be dispatched
19:40:11 – First order for all firefighters to remain out of the building
19:48:42 – Requests Ladder 4 to the scene

Summary:

The Fire Chief was off-duty and returning from visiting his parents. He was approximately 7.6 miles from the scene at the time of dispatch. The Fire Chief monitored the radio traffic and began his response when Engine 12 was dispatched to the incident (approximately 19:13).

When the Fire Chief arrived on the scene, he parked his vehicle in the middle of Savannah Highway and donned his personal protective clothing.

As the Fire Chief walked toward the front of the building, Engine 12 was arriving. He told Engineer 12 where the closest fire hydrant was located and assisted Engineer 10 as he connected the lines.

Car 1, continued

The Fire Chief met the Assistant Chief at the northwest corner of the fire building. They had a brief conversation and the Fire Chief told the Assistant Chief that he would be in charge of the loading dock area and the Assistant Chief would have the front. Traditionally in the Charleston Fire Department, the Fire Chief takes the side of the incident that has the most active fire.

The Fire Chief did not see any smoke at the front of the building before he went to the loading dock area.

As the Fire Chief arrived at the loading dock area, firefighters were clamping the 1-1/2 inch handline from Engine 10 that had burned through and were replacing the hose.

The Fire Chief conferred with Battalion 4 about the situation. Battalion 4 told him that they had fire in the loading dock. The Fire Chief saw that a handline was in place on the ramp that led to the staging area door. The Fire Chief observed that the walls of the warehouse were cherry red and that there was an obvious working fire inside. Firefighters made up a 2-1/2 inch attack line with a stacked tip as other firefighters forced entry into the warehouse.

The Fire Chief ordered firefighters from Engine 10 and Engine 12 who were operating a 1-1/2 inch handline into the loading dock to hold their position at the door. The warehouse was opened and firefighters operated the 2-1/2 inch line into the warehouse from the exterior. The Fire Chief ordered the firefighters on the 2-1/2 inch line to remain outside the building.

The Fire Chief was advised by dispatch that a civilian was trapped at the back of the building. At some point, prior to going to the front of the building, the Fire Chief met briefly with the on-duty Saint Andrews Assistant Chief. The Fire Chief assigned the Saint Andrews companies to fight the fire at the back of the warehouse, off of Pebble Road.

Car 303 met the Fire Chief near Engine 10's apparatus. Car 303 advised the Fire Chief that he had heard distress calls from firefighters. The Fire Chief called to the Assistant Chief at the front of the building to advise him of the Mayday. As he walked to the front of the store, the Fire Chief advised the Assistant Chief that all of the firefighters at the loading dock were outside.

The Fire Chief does not recall hearing any of the firefighter distress calls.

Car 1, continued

The Fire Chief met the Assistant Chief, Battalion 5, and Car 303 at the front of the store. Air horns were sounded to notify firefighters of an evacuation. The Fire Chief did not allow any firefighters to reenter the structure due to fire conditions.

The Fire Chief and other chief officers called for Captain 15 because he could not be located after Firefighter 15A emerged from the building and did not know the location of his captain.

Although initial accountability efforts concentrated on Captain 15, it soon became apparent that others were missing as well.

The Fire Chief does not recall arranging for a water supply for Ladder 5 prior to coming to the front of the building - he summoned Engine 3 to the scene prior to being aware of the firefighters in distress.

The Fire Chief recalled that Ladder 5 was at the front of the building when he came to the front. This is probably mistaken, because Ladder 5 was backing into the lot next door as Car 303 arrived at the scene, prior to making the Fire Chief aware of the distress calls.

The Fire Chief does not recall sending any Saint Andrews firefighters into the structure after the distress calls. He does remember Saint Andrews Rescue 1 Driver, SA1, coming out of the structure along with other firefighters.

The Fire Chief does not recall giving an order or who might have given an order to remove the windows at the front of the store.

The Fire Chief can be heard on the radio seeking Firefighter 15B at 20:26:46. He can be heard seeking Captain 5 and Engineer 5 at approximately 20:37:37.

The Fire Chief recalls seeing the following firefighters coming out of the building: Captain 6, Engineer 6, Firefighter 15A, Firefighter 15B, Firefighter 6, and Saint Andrews Rescue Driver (SA1). He was also aware that other firefighters had been inside and had escaped (Captain 11, Firefighter 11, Engineer 15).

The Fire Chief was not aware of any reports of firefighters having their hands on any of the firefighters that died in the incident during any rescue attempt.

Car 2

Assistant Chief

Note:

The Assistant Chief was working for the Assistant Chief normally assigned to “B” shift.

Times:

19:11:11 – Orders Engine 11 to come behind the Sofa Super Store
19:11:35 – Orders Engine 10 to come to his position and back into the alley
19:12:10 – Orders Engine 16 to come inside the building upon their arrival
19:12:49 – Orders the dispatch of Engine 12 to the scene
19:13:31 – Orders Engine 15 to the scene
19:13:46 – Orders Engine 15 to bring a handline into the building upon their arrival
19:14:10 – Tells BC4 that he has fire inside the rear of the building walking its way into the showroom
19:14:23 – Orders the dispatch of Engine 6 to the scene
19:15:05 – Orders the 1-1/2 inch line to be charged
19:15:15 – Orders Engine 16 to stretch a 2-1/2 inch handline into the store
19:17:14 – Orders Engine 12 to lay a line for Engine 10
19:17:36 – Orders Engine 16 to lay to a hydrant for Engine 11
19:20:05 – Tells Engineer 11 not to charge the 2-1/2 until he has a supply line
19:21:26 – Inquires about the supply line from Engine 16
19:23:16 – Tells the Fire Chief that he is assessing the fire conditions (in SCBA)
19:24:22 – Fragment of a transmission about a 2-1/2 (in SCBA)
19:28:03 – Tells the Fire Chief about a civilian trapped in the store
19:28:42 – Calls for help from any available firefighter
19:30:02 – Tells the Engineer 11 that he has the help he needs
19:30:58 – Working to free trapped civilian
19:31:42 – Requests EMS for the injured civilian
19:32:53 – Additional information for EMS
19:33:17 – Tells the Fire Chief that fire crews remain in the building
19:33:52 – Identifies Firefighter 15A as a firefighter that escaped the building
19:34:01 – Tells the Fire Chief that Firefighter 15A did not call the Mayday
19:35:34 – Tells the Fire Chief that Captain 11 has been located

Car 2, continued

Summary:

The Assistant Chief had just completing eating dinner with Battalion 4 and the crew of Engine 11. When the Sofa Super Store incident was dispatched, he helped firefighters prepare the engine for response and then watched as Battalion 4 and Engine 11 responded from their quarters.

The Assistant Chief heard Battalion 4 report smoke in the area and immediately responded to the incident. As he responded to the scene, he saw a black column of smoke rising from the scene.

As he responded, the Assistant Chief saw that Engine 11 had taken the block around to the back of the store and told them to come around. When the Assistant Chief arrived on the scene, he conferred with Battalion 4. Engine 10 was arriving on the scene at that time so he ordered Engine 10 to back down the alley to attack the fire and called fro Engine 12 to be dispatched. The Assistant Chief did not go to the loading dock area until much later in the incident, after fire had taken hold of the building.

The Assistant Chief went inside the showroom to assess conditions. The Assistant Chief and two store managers walked into the store through the front entrance and found clear conditions inside. The managers led the Assistant Chief and Captain 11 to the rear of the showroom to a set of double doors that led to the loading dock. As they approached the doorway, the Assistant Chief saw a small puff of smoke above the doors at the level of the dropped ceiling.

The door was not hot. The Assistant Chief turned the knob and the door was quickly pulled open by air rushing from the store into the loading dock. Fire could be seen in the loading dock to the right of the double doors, near the exterior wall. Captain 11 closed the door. The Assistant Chief ordered Captain 11 to get a handline.

The Assistant Chief called for Engine 15 to respond to the fire and then for Engine 6 to respond. (The Fire Chief directed Engine 19 to respond in place of Engine 6).

When he walked back outside, the Assistant Chief was met at the door by Captain 5. Captain 5 and his crew were advancing a handline into the building from Engine 11 which was parked by the door. Conditions inside the showroom were still clear. The Assistant Chief called for Engine 16 to bring a 2-1/2 inch line into rear the showroom on the right side.

Car 2, continued

The Assistant Chief donned his turnout coat, helmet and SCBA backpack and went back into the store. The Assistant Chief observed light smoke in the showroom. He was able to see firefighters in the doorway applying water to the fire in the loading dock. He did not observe any fire in the retail area of the store.

While he was inside the showroom, the Assistant Chief received a call regarding the trapped civilian. He met Captain 19 and the crew from Engine 19 who were on the way into the showroom as he was headed out and directed them toward the double doors. The Assistant Chief then spoke with the store managers about the report of the trapped civilian and determined that the civilian was most likely trapped in a workshop area of the building that was not accessible from the showroom due to the fire.

When he emerged from the store, the Assistant Chief spoke with the Fire Chief on the radio about the trapped civilian. The Assistant Chief and two store managers walked around the east end of the store and encountered a locked wooden fence. The Assistant Chief walked back to the front of the building and yelled to Battalion 5 who had just arrived on the scene. Battalion 5 brought a crew of firefighters from Saint Andrews Fire Department Engine 2 and Rescue 1 around to the side of the building.

Battalion 5 borrowed an axe from the Saint Andrews firefighters and opened the wooden fence gate. The Saint Andrews firefighters, two managers, and two chiefs walked behind the building. One of the store managers directed the firefighters where to hit the wall. A firefighter put a Halligan tool through the wall and a hand immediately emerged from the hole. Firefighters widened the hole and the trapped civilian came out through the opening.

As firefighters walked the injured civilian around the front of the building, bystanders applauded. The injured civilian was propped up against a truck and EMS was notified of his location.

When the Assistant Chief came back around the front of the building, he could see that conditions inside the showroom had changed dramatically. He was joined at the front of the building by the Fire Chief, Car 303 and the Training Chief.

The Assistant Chief does not recall donning the facepiece of his SCBA at any point. (There are at least two radio transmissions by the Assistant Chief that sound as if they were spoken through an SCBA facepiece.) He does recall doffing the SCBA backpack when he went around to the rear of the store to help with the rescue.

Car 2, continued

The Assistant Chief believes that Captain 15 reached out from the store and borrowed his handlight after he came around the front of the building. The review team could not support this assertion based on our interviews.

The Assistant Chief does not recall giving an order to break the windows at the front of the store.

Battalion 4

Battalion 4

Notes:

Fire Station 11 – 1517 Savannah Highway – approximately .9 miles from the Sofa Super Store

Battalion 4 and Engine 11 are housed at Fire Station 11.

Times:

19:09:02 – Dispatched from quarters
19:09:44 – Reports smoke in the direction of the Sofa Super Store
19:10:46 – On-scene reporting trash and debris fire
19:10:56 – Informs dispatch that the fire may be in the building
19:11:13 – Directs the placement of Engine 11
19:12:43 – Informs Car 2 that he believes fire is in the building
19:13:10 – Orders Engine 12 to lay a line
19:17:07 – Directs the movement of Engine 12
19:34:27 – Requests a pumper for Ladder 5
19:35:08 – Identifies Engineer 5

Summary:

Battalion 4 was in quarters at Fire Station 11 at the time of dispatch. As he was responding, he reported smoke in the area of the incident.

Battalion 4 was the first Fire Department unit on the scene. He was able to drive his sedan down the alley to the loading dock area. Upon his arrival at the scene at 19:10:46, Battalion 4 reported a trash and debris fire up against the building. After making his arrival report, Battalion 4 backed his car out of the alley and parked it in front of the store to allow for access to the fire by the first arriving engine company.

At the time of Battalion 4's arrival, the flames were taller than the loading dock area. Battalion 4 saw a window leading into the staging area but did not initially see fire in the building. Moments later he reported that the fire may have gotten into the building.

When Engine 10 arrived on the scene, Battalion 4 walked with Captain 10 as the engine backed down the alley to the loading dock area. When Battalion 4 and Captain 10 arrived at the loading dock area, flames were visible inside of the staging area.

Battalion 4, continued

When Engine 12 was dispatched, Battalion 4 ordered them to lay a line for Engine 10. When Engine 12 arrived on the scene, Battalion 4 again ordered them to lay a supply line for Engine 10 and helped Engine 12 locate Engine 10. Engine 10's position was blocked by the store and a fence.

Battalion 4 ordered a Firefighter 12A to force entry into the warehouse and ordered a fire department mechanic that had arrived on the scene to retrieve a power saw and bring it to the loading dock area. Firefighter 12B arrived and the man door to the warehouse was opened. Battalion 4 observed fire inside of the warehouse to the left of the door. He ordered firefighters to remain outside of the warehouse.

Battalion 4 ordered two off-duty firefighters that had responded to the incident to move Ladder 5 from the front parking lot of the store to the field adjacent to the Sofa Super Store.

The Fire Chief arrived in the loading dock area and took command of operations in that area.

Battalion 4 helped set up Ladder 5 in the field next to the Sofa Super Store. He assisted in securing a water supply for the ladder, first from a Saint Paul's Fire Department tanker and then from Engine 3.

Battalion 4 also coordinated with Saint Andrews Fire Department command officers and firefighters on their work fighting the warehouse fire from Pebble Road.

Battalion 5

Battalion 5

Note:

Fire Station 7 – 1173 Fort Johnson Road - approximately 7.8 miles from the Sofa Super Store.

Times:

19:15:30 – Responding to the Sofa Super Store
19:24:09 – Arrives on the scene
19:31:19 – Reports that the civilian has been rescued from the store
19:37:18 – Orders the dispatch of Engine 13 to the scene

Summary:

Battalion 5 was conducting an SCBA drill at Fire Station 7. Engine 13 also attended the training session. Firefighters monitored the radio and heard the initial dispatch to the Sofa Super Store. The arrival report at the fire did not indicate a working fire so the drill continued. Once additional units were summoned to the scene, Engine 13 was directed to return to their station and Battalion 5 began his response to the Sofa Super Store.

Battalion 5 observed smoke in the air as he responded to the scene. As he arrived on the scene, he passed Engine 16 at a hydrant. The supply line that was being pumped by Engine 16 had been charged.

Battalion 5 parked his vehicle in the center of Savannah Highway and observed Engine 11 in the front parking lot of the store and three engines in the street (E6, E15, and E19). He observed Ladder 5 in the leftmost lane of the highway, past the Sofa Super Store. Battalion 5 donned his protective clothing and proceeded to the front door of the store.

Battalion 5 met the Assistant Chief at the front door of the store and requested orders. Battalion 5 observed that the front door of the store was propped open and that a charged 1-1/2 inch line, an uncharged 2-1/2 inch line, and a booster line were through the door. Battalion 5 observed smoke inside the store from floor to ceiling with limited visibility at the floor level for the first few feet into the store. He was able to see through the windows of the store and did not observe any soot or condensation on the windows. Smoke was emanating from the doorway but did move with much force.

Battalion 5, continued

The Assistant Chief reported the he was going to around to the rear of the building based on a report of a civilian trapped in the store. Battalion 5 was not aware of the trapped civilian until he was advised by the Assistant Chief. Battalion 5's attention was temporarily drawn to Engine 11 as the engineer was experiencing water supply problems.

Moments later, the Assistant Chief called to Battalion 5 and requested firefighters with tools to assist him. Several firefighters from the Saint Andrews Fire Protection District approached the front of the store. Battalion 5 ordered them to gather tools and come with him. The Assistant Chief, Battalion 5, and two store managers encountered a locked wooden gate and fence at the rear of the structure. Battalion 5 tried unsuccessfully to open the gate with the axe he had carried. The Saint Andrews firefighter arrived and opened the gate.

The Assistant Chief, Battalion 5, the three Saint Andrews firefighters, and the two store managers proceeded to the rear of the building. They located the room where the civilian was trapped after hearing banging on a wall. The metal side of the building was cut open by Battalion 5 and a Saint Andrews firefighter and the civilian was removed. The civilian was brought to the front of the building by the Saint Andrews firefighters; the Assistant Chief and the store managers also returned to the front of the store.

Battalion 5 remained at the rear of the store for a short time. He called out for others that might have been trapped in the structure but got no response. As he left the rear of the store, he observed smoke pushing with some force from holes that had been cut into the metal building walls. He reported the rescue of the civilian at 19:31:19.

When Battalion 5 returned to the front of the store he met the Fire Chief, the Assistant Chief, and other firefighters. He learned that firefighters were in trouble and was directed by the Assistant Chief to break out some of the windows at the front of the store. Battalion 5 broke out two large windows to the left of the front door. A third window blew out as he approached it.

After fire emerged from the front of the structure, Battalion 5 moved the Assistant Chief vehicle away from the building. He directed Captain 11 to lay an additional supply line with Engine 19's apparatus, and made his way to the west side of the building to supervise operations on that side.

Battalion 5, continued

Firefighters on the west side of the building fought fire in the loading dock and warehouse as well as cutting a number of holes into the metal wall of the west showroom to apply water to the fire.

Battalion 5 later participated in body recovery efforts.

Car 303

Car 303

Notes:

Car 303 was off-duty, cooking for a charity golf tournament in far northwest Charleston, West of the Ashley River, approximately six miles from the Sofa Super Store.

Car 303 had been in public areas of the Sofa Super Store to purchase furniture for the fire department within two years of the fire.

Times:

19:30:27 – Car 303 attempts to call Car 1
19:32:19 – Car 303 attempts to call Car 1
19:32:33 – Car 303 on the scene (approximate)

Summary:

Car 303 was cooking at a golf charity event to honor a firefighter who had been killed in an off-duty car crash. He was monitoring his portable radio and heard the original dispatch. When Battalion 4 arrived on the scene and reported a trash fire, Car 303's attention was drawn away from his radio for a time. Car 303 received a phone call from another firefighter advising him that there was a working structural fire at the Sofa Super Store.

Car 303 and his son immediately left the golf course and proceeded in the direction of the Sofa Super Store. About half way to the scene, smoke from the fire was visible.

During the drive, Car 303 monitored incident radio traffic on his portable radio. He heard several transmissions that sounded like firefighters in distress and made several unsuccessful attempts to contact the Fire Chief at the scene over the radio. The first transmission from Car 303 that is captured on the communications recording is at 19:30:27.

When he arrived at the scene at approximately 19:32:33, Car 303 parked his personal vehicle and ran to the Fire Chief's location to inform him of what he had heard. He found the Fire Chief directing operations on the west side of the building near the loading dock. He told the Fire Chief that he had heard a firefighter in distress. The Fire Chief asked Car 303 who had called the Mayday but Car 303 had not recognized the voice of the firefighter(s) in distress.

Car 303, continued

The Fire Chief called the Assistant Chief on the radio and informed him of the Mayday. The Fire Chief said that all of the firefighters in the area that he was working were outside and asked the Assistant Chief about the status of his crews. The Assistant Chief responded that crews were still inside and then advised that one firefighter had just come out of the store. The firefighter was identified as Firefighter 15A. The Fire Chief and Car 303 knew the identity of the Captain of Engine 15. They headed toward the front of the store.

At the front of the building the Fire Chief proceeded to the front door of the retail area of the building and Car 303 ran to his vehicle to retrieve his personal protective clothing. Car 303 met back up with the Fire Chief at the front door of the store. As Car 303 approached the front door, the front windows were being removed. The Fire Chief told Car 303 that they could not locate Captain 15. At that point, Captain 15 was the only firefighter that was known to be missing so efforts concentrated on finding him.

Car 303 donned an SCBA and made contact with Captain 6 and Engineer 6. Captain 6 and Engineer 6 had just left the structure. Car 303 asked them if they knew the location of Captain 15 - they did not know.

Saint Andrews Firefighters SA1 and SA2 exited the structure shortly thereafter and told Car 303 that they had made contact with two lost firefighters inside of the building. Firefighter SA1 indicated that the firefighters were in the main retail area of the store, straight in from the front door.

Car 303 requested and was handed the rescue rope by Engineer 11. He brought it to the door with the intention of making entry to perform a search. Car 303 entered the building breathing air from his SCBA and crawled about 15 feet into the building when he began to receive burns to his hands. He had neglected to don gloves on his way into the building. Car 303 returned to the exterior and donned his gloves. He reentered the structure and made it approximately 10 feet inside when he was driven back out by fire conditions. As he withdrew, he could see a wall of flames across the store and going over his head.

When Car 303 reached the exterior he saw fire venting from several windows on the front of the store. At that point, Car 303 conferred with the Fire Chief and they decided that there was nothing more to be gained from interior operations. Their efforts concentrated on defensive operations to bring the fire under control.

Car 303 assisted with the location, recovery, and removal of the deceased firefighters from the building.

Engine 6

Crew:

Captain 6
Engineer 6
Firefighter 6 in the suction position

Times:

19:13:59 – Relocating to the West side
19:14:23 – Requested to the scene by the Assistant Chief
19:14:45 – Redirected to Fire Station 11 by the Fire Chief
19:16:09 – Reports arrival on the west side of the Ashley River Bridge
19:19:12 – Ordered to the scene by the Fire Chief
19:21:50 – Arrives on the scene

Summary:

Engine 6 was in quarters when the Sofa Super Store incident was initially dispatched. Based on standard protocols, Engine 6 began to relocate to the West Ashley district of Charleston when a working fire was reported.

As Engine 6 was enroute, they were requested to respond to the scene by the Assistant Chief. Engine 6 was redirected to cover at Fire Station 11 by the Fire Chief and Engine 19 was dispatched to respond to the scene of the incident.

As Engine 6 was passing Fire Station 10 enroute to Fire Station 11, they were ordered by the Fire Chief to respond to the scene, park the truck in the middle of Savannah Highway, and come into the store through the front door. The Fire Chief told Captain 6 after the fire that he summoned Engine 6 to the scene when he saw the volume of fire in the loading dock and warehouse area to the rear of the store.

Engine 6 arrived at the scene at 19:21:50, approximately twelve minutes and 48 seconds into the incident. As they arrived on the scene, Engineer 6 remarked to Captain 6 that this was looking like it was going to be a difficult incident.

Engine 6, continued

Captain 6 and Firefighter 6

Upon their arrival, Captain 6 and Firefighter 6 ran to the front door of the store, donned their SCBA facepieces, and made entry. Near the entrance they encountered Captain 11 and Firefighter 11. Captain 6 asked Captain 11 where the nozzle was located and Captain 11 replied that they needed a larger line.

Captain 6 and Firefighter 6 followed the 1-1/2 inch hose line toward the rear of the showroom. As they proceeded, they had no visibility in the heavy smoke, although they could walk upright and did not encounter any significant heat.

Captain 6 followed the 1-1/2 inch handline back into the showroom until he found the nozzle on the floor. He ordered Firefighter 6 to pull the hose to provide him with additional line. Captain 6 found a large volume of fire and flowed water into a room from the doorway. He believes that he was at the double doors leading to the loading dock. Captain 6 heard the voices of other firefighters in the smoke, but did not make close contact with any of them.

Captain 6 flowed the handline for approximately five minutes. He temporarily shut the nozzle when the fire appeared to darken down. As the fire flared up again, he reopened the nozzle to apply water but found that he had little pressure and minimal flow. He attempted to contact the Fire Chief by radio but was unsuccessful. His portable radio may have been turned off or a knob may have been broken.

Heat conditions in Captain 6's position worsened rapidly. Captain 6 began to feel burns on his wrists. He attempted to reposition himself into a more defensive position but the heat conditions continued to worsen. He decided to abandon his position.

Captain 6 followed the line back into the main showroom area of the store, noting that heat conditions improved. He found that the handline was looped around and did not provide a clear path to the exit. His Vibralert was activated and he did not hear any other firefighters in the area. He guessed at the direction of the front door and climbed over piles of furniture to move in that direction. Captain 6 fell off of a piece of furniture and made contact with Firefighter 6.

Captain 6 told Firefighter 6 that he was nearly out of air; his face piece began to suck to his face with every breath. Captain 6 followed the line and encountered Engineer 6. The three firefighters followed the lines back to the main entrance and emerged at approximately 19:35:14.

Engine 6, continued

Firefighter 6 did hear distress calls from firefighters while he was inside of the building.

Engineer 6

Engineer 6 donned his personal protective clothing and SCBA upon arrival, took a pike pole off of the apparatus, and approached the front of the store. He neglected to carry his portable radio with him. As he arrived at the front door, he saw Captain 11 leaving the store. Engineer 6 was also advised by a store manager that someone was trapped at the back of the building. The manager had thought that everyone was out of the building, but saw one worker's vehicle in the parking lot.

Engineer 6 donned his face piece and entered the showroom through the front door. As he entered, he observed an area clear of smoke, like a tunnel, that extended about five feet into the store from the entrance. Black smoke obscured vision on both sides of the "tunnel". A large volume of air was being drawn into the store from the exterior. He dragged his foot on the hose and then picked up the hose to guide him to the back of the store. Engineer 6 encountered a firefighter in the smoke near the rear of the store. He believes that this firefighter was Firefighter 6.

Sensing that there were enough firefighters on the handline, Engineer 6 moved to the left away from the handline. He moved about 10-20 feet and encountered a wall. Engineer 6 struck the wall with his pike pole several times. Smoke conditions in the area were heavy and Engineer 6 could sense heat from the fire. The aisles of the store had begun to become congested due to the movement of furniture that was entangled with the hoses.

An unknown firefighter grabbed Engineer 6 and told him that he was lost and about to run out of air. Engineer 6 grabbed the firefighter's coat as a second, third, and fourth firefighter arrived. Engineer 6 heard the vibra-alerts on the SCBA's of the firefighters, indicating that they were low on air. The firefighters were in obvious distress. One firefighter dropped to the floor and crawled under Engineer 6 and disappeared. The other three firefighters in distress also turned away and disappeared. The entire exchange occurred in a very short period of time. Engineer 6 believes, but cannot be certain, that these firefighters were Captain 19, Captain 16, Engineer 9, and Firefighter 19.

By this time, Engineer 6 had lost track of the handline and was disoriented. He circled around approximately five times in growing circles until he came into contact with the hose.

Engine 6, continued

Immediately upon contacting the hose, Engineer 6 encountered Firefighter 15A. Firefighter 15A was disoriented and low on air. Engineer 6 followed the hose line, dropped his pike pole, and led Firefighter 15A to the front building exit.

Engineer 6 removed his facepiece once he reached the exterior and asked Firefighter 15A if he was okay. Once confirming that Firefighter 15A was alright, he donned his facepiece and reentered the store. He made his way to the back of the showroom where he encountered Captain 6 and Firefighter 6. Captain 6 was nearly out of air and Engineer 6 led him to the exit. Firefighter 6 followed the pair to the exit. The three firefighters made their way to the exterior and emerged at approximately 19:35:14.

Engineer 6 checked the pressure on his SCBA and found that he had 600 psi remaining. Engineer 11 changed Engineer 6's SCBA cylinder. When he stood back up after the cylinder change, Engineer 6 observed fire emitting from the front of the store.

Engineer 6 and other firefighters operated a 2-1/2 inch handline into the store. Car 303 entered the store briefly but was driven from the building by fire conditions. Initially, water supply on the 2-1/2 was sufficient but soon the line was not getting enough water to have any effect. Engineer 6 joined other firefighters, including the Training Chief, on another handline to the right of the store entrance.

Engineer 6 rejoined his crew and assisted other firefighters in cutting holes into the right hand wall of the store, along the alley near Engine 10. He also removed panels from the rollup door on the warehouse.

The crew of Engine 6 made up part of the first search team sent into the building to search for the remains of the missing firefighters. They located and recovered the remains of several firefighters. After midnight, the crew of Engine 6 left the building and found their apparatus near Pebble Lane. All of the supply line had been laid but the apparatus was not being utilized.

Engine 10

Crew:

Captain 10
Engineer 10
Firefighter 10 in the suction position

Notes:

Firefighter 5 was assigned to Engine 10, working for another firefighter. He switched positions with Firefighter 10 on Ladder 5 to allow for Firefighter 10 to participate in driver and pump operations training.

Captain 5 was normally assigned as the Engineer of Engine 10. On the day of the fire he was Acting Captain of Ladder 5.

Engineer 10 was working the first part of the shift for another Assistant Engineer Fulmer.

Times:

19:09:02 – Dispatched
19:09:37 – Responding
19:11:03 – Acknowledges Battalion 4 arrival report
19:11:40 – On the scene and ordered to back down the alley by the Assistant Chief
19:23:49 – Engineer 10 requests additional water from E12

Summary:

Engine 10 was in the parking lot of a grocery store on Savannah Highway when the incident was initially dispatched. They had just pulled into the parking lot to shop for supper and the full crew was on board. This placed Engine 10 closer to the Sofa Super Store than if they had been in quarters. Engine 10 responded immediately upon dispatch.

The crew had been engaged in driver and pump operator training. The left-hand preconnected 1-1/2 inch handline was in its bed. The second pre-connected line had been stretched and charged during the training session and the hose was rolled on the tailboard.

Engine 10, continued

Engineer 10 saw Engine 11 pull out of their station and turn toward the fire as they approached. As the apparatus approached the scene, Engineer 10 and Captain 10 could see a black plume of smoke rising from the scene. The plume was narrow, straight up, and very dark. As the units got closer to the scene, Engine 11 turned onto a side street to access the back of the store.

Engine 10 was the first engine on the scene. The Assistant Chief ordered Engine 10 to come to his location and back down the alley leading to the loading dock area where the fire was located. Captain 10 and Engineer 10 both independently recall being able to see customers or civilians inside the store as they pulled up into the parking lot and prepared to back down the alley. They both assumed that they would be backing down to lay a line for an engine that was already at the rear of the building.

Battalion 4 walked with Captain 10 as the engine backed down the alley to the loading dock area. Captain 10 initially observed a debris fire outside the building. He also observed smoke and flames inside the loading dock. Once the apparatus was in position, Captain 10 pulled the booster line and attacked the fire from the exterior. Firefighter 10 pulled the 1-1/2 inch preconnected handline.

Captain 10 and Firefighter 10 opened the sliding door leading into the loading dock at the top of a ramp. The door was not locked. They found active fire in the room. They advanced the 1-1/2 inch handline 15-20 feet into the area and flowed water on the fire. The room seemed to the firefighters to be one open area with fire involving almost every part of the room. The fire appeared to Captain 10 to be burning gasses at the ceiling level rather than burning contents of the room. Captain 10 recalls one brief instance while he was inside when it seemed that the fire was being pushed in his direction by another handline.

Engineer 10 stretched a 2-1/2 inch supply line by hand out to Savannah Highway. He was met at the street by the Fire Chief. The Fire Chief told him to stand by for a moment and await the arrival of an engine. Engine 12 pulled up and laid a line away from the scene. Engineer 10 returned to his apparatus. When he arrived at the apparatus, Captain 10 and Firefighter 10 were coming out of the structure.

Fire conditions in the loading dock had changed rapidly. Captain 10 and Firefighter 10 reported that the heat increased dramatically, to the extent that the facepiece worn by Firefighter 10 melted and crazed. The firefighters were surrounded by flames. At the same time, the hose line burned through and both firefighters were able to abandon their interior position and get back outside. The spray of water created by the burned section of hose created a “water curtain” that protected them as they exited.

Engine 10, continued

Captain 12 and Firefighter 12A joined the crew of Engine 10 at the loading dock area and pulled the nozzle outside to replace the burst section of hose. While the burned section was being replaced, Firefighter 10 applied water to the fire on the interior of the staging area with the booster line. The interior fire grew in intensity.

The Fire Chief arrived at the loading dock area at approximately the same time the section of hose was being replaced. He assumed command of the fire fighting operations in the loading dock area.

Once the water supply to Engine 10 was established, Firefighter 12B arrived to assist.

When the 1-1/2 inch line was recharged, Captain 10, Captain 12, and Firefighter 12A operated the line from the doorway leading into the loading dock. The firefighters were ordered by the Fire Chief not to go back inside to fight the fire.

Engineer 10 experienced water supply problems and was assisted by the Fire Chief in having Engine 12 increase the pressure in the supply line. The water supply to Engine 10 from Engine 12 was frequently interrupted by cars driving over and parking on the supply line on Savannah Highway.

After approximately five minutes of flowing water into the staging area through the doorway, the Fire Chief ordered Captain 10 to work on the fire in the warehouse. Captain 10 entered the man door of the warehouse and saw a large amount of fire in every area of the warehouse. An interior attack was not appropriate.

A 2-1/2 inch attack line was stretched from and charged by Engine 10. The line was used to apply water to the interior of the warehouse once access was made through the man door and the rolling door.

At some point, Firefighter 15B joined firefighters in the loading dock area.

The crew of Engine 10 remained in the dock area and also fought fire through holes cut into the wall of the right-hand retail area addition.

Engine 11

Crew:

Captain 11
Engineer 11
Firefighter 11 in the suction position

Notes:

Fire Station 11 – 1517 Savannah Highway – approximately .9 miles from the Sofa Super Store

Battalion 4 and Engine 11 are based at Fire Station 11.

Captain 11's normal assignment was as the Engineer of Engine 11.

Engineer 11's normal assignment is Engine 3. The Sofa Super Store was his first fire as an Acting Engineer.

Captain 11 had been part of a walk through of the Sofa Super Store and had shopped in the store. Engineer 11 was generally familiar with the store having been raised in the area. Firefighter 11 had also been inside of the store and had previously discussed fire and water supply issues at the store with other firefighters.

Times:

19:09:02 – Dispatched as a part of the initial response
19:09:51 – Responding
19:11:23 – On-scene (approximate)
19:13:17 – Captain 11 calls for an attack line to be brought inside
19:15:56 – Engineer 5 calls for E11 to charge the 1-1/2 inch line
19:16:23 – Firefighter 5 calls for E11 to charge the 1-1/2 inch line
19:22:41 – Engineer 11 calls for his supply line to be charged
19:26:17 – Engine 11's supply line is charged by E16
19:29:02 – Engineer 11 charges 2-1/2 inch handline
19:38:14 – Engineer 11 calls for additional pressure on the supply line
19:42:54 – Engineer 11 calls for additional pressure on the supply line
19:45:08 – Engineer 11 calls for additional pressure on the supply line
19:46:00 – Captain 11 discusses additional water supply with Battalion 4

Engine 11, continued

Summary:

Engine 11 was in quarters at the time of the original dispatch. The Assistant Chief was visiting Fire Station 11 for dinner and was present at the time of the dispatch.

The firefighters had just completed dinner and were washing the engine at the time of dispatch. They quickly returned equipment into the apparatus compartments and readied the apparatus for response.

When Engine 11 turned left out of quarters, the black smoke column from the Sofa Super Store was immediately visible. The dispatch message indicted that the fire was behind the Sofa Super Store. In order to access the rear of the structure, Engine 11 turned left on Wappoo Road and right on Pebble Road. Realizing that the fire could not be accessed from that side, Engine 11 continued on Pebble Road, turned right on Stinson Drive, right again on Savannah Highway, and arrived at the front of the Sofa Super Store.

Engine 10, Car 2, and Battalion 4 were all on the scene by the time Engine 11 arrived at the front. Engine 11 stopped in the front of the Sofa Super Store on Savannah Highway as Engine 10 was backing into the alley on the west side to access the fire. Captain 11 was wearing his personal protective clothing. He dismounted the apparatus and told his crew to lay a supply line for Engine 10. Ladder 5 was approaching the scene at that time.

Captain 11 had heard the radio report that the fire may be inside the building. He went inside the showroom to assess the situation. Captain 11 did not see any smoke in the showroom, but was concerned about the spread of fire from the back of the building into the retail area. As he walked through the store, Captain 11 met the Assistant Chief. They walked to the rear and turned right, then went through a doorway framed by a block wall into another retail area (west showroom).

As the firefighters passed through the door, they observed a set of double door to their left. The double doors led to the loading dock. Captain 11 noted a small amount of grayish colored smoke at the suspended ceiling above and to the left of the doors. The Assistant Chief turned the knob and the door was quickly pulled open by the air rushing from the store into the loading dock. Captain 11 observed a couch on fire, heavy black smoke, and an orange glow inside the loading dock. Air continued to be drawn into the loading dock from the showroom. Captain 11 reached in and closed the door. The Assistant Chief ordered Captain 11 to get him an attack line.

Engine 11, continued

Captain 11 departed immediately for the front of the store. As he proceeded, he called on the radio for a 1-1/2 inch handline to be brought into the building. The time was 19:13:17.

Captain 5 directed Engineer 11 to move his apparatus to the front door of the store. They guided him to position Engine 11 near the front door and told him that they were going to pull the right-hand preconnected handline.

When Captain 11 went into the store, Firefighter 11 took the soft suction and hydrant wrench from Engine 11 and began to walk in the direction of a fire hydrant near Morris Nissan. Firefighter 11 doffed his SCBA backpack and left it on the street. When he reached the intersection of Wappoo Road and Savannah Highway he observed that Engine 11 was being repositioned near the front door of the store. He returned to the apparatus, dropped the soft suction by the pump panel and donned another SCBA.

When Captain 11 emerged from the front of the store, he saw Captain 5 stepping up onto the back of Engine 11 to deploy a 1-1/2 inch handline. Captain 11 asked Captain 5 why Engine 11 was not laying the line for Engine 10. Captain 5 told him that another engine was going to lay a line for Engine 10.

Captain 5 advanced the hose line into the showroom. Captain 11 grabbed several loops of hose and followed Captain 5 and Engineer 5 into the store. Captain 11 pulled hose to the rear of the main aisle of the store and realized that Captain 5 would need additional hose to reach the loading dock.

Captain 11 returned to the exterior, removed the nozzle from the other 1-1/2 inch preconnected attack line and connected the two lines together. This action increased the overall length of the attack line to 500 feet, providing sufficient hose to reach the fire. Captain 11 removed the second preconnected line from the hose bed and advanced the additional hose into the structure. Firefighter 11, who had arrived back at the apparatus, removed the remainder of the hose from the hose bed and flaked out the line to ensure that it would not kink.

Firefighter 11 followed the hose line into the building and joined Captain 11 and the other firefighters near the double doors. As he proceeded to the rear, he passed civilians leaving the store. The atmosphere was clear until he reached the area where the other firefighters were operating. He observed smoke in this area and donned his face piece.

Engine 11, continued

The 1-1/2 inch handline had not been charged. Captain 11 sent Firefighter 11 back to the engine to check and see why the line was not charged. A few moments later, with no water yet in the line, Captain 11 went back to Engine 11 to determine why the line was not charged. When he arrived at the engine, Engineer 11 told him that he could not get the truck into pump gear. Captain 11 was familiar with an idiosyncrasy with the pump engagement for this particular piece of apparatus[1]. He engaged the pump, charged the 1-1/2 inch handline, and returned to the interior of the store.

Captain 11 reentered the store and began to proceed to the double doors. As he reached the rear part of the showroom he encountered smoke and stopped to don his SCBA face piece.

When Captain 11 rejoined the crew of Ladder 5 at the double doors they had also donned their face pieces. The 1-1/2 inch handline had been advanced into the loading dock through the double doors and was flowing water. Engineer 5 was at the doorway and he believed that Captain 5 was inside the loading dock operating the nozzle. Captain 11 backed them up on the line.

Captain 16 and Firefighter 16 arrived at the double doors with a 2-1/2 inch handline. The 2-1/2 inch line was uncharged and was placed on the floor near the door. Captain 16 made a comment to Captain 11 stating that they would be in trouble if the fire got behind them.

After two requests had been made to charge the 2-1/2 inch line, Captain 11 started back to Engine 11 to determine why the 2-1/2 inch handline had not been charged. As he walked through the middle showroom the atmosphere was filled with black smoke and the heat had markedly increased. As he proceeded to the exit, Captain 11 recognized the voices of Engineer 19 and Firefighter 19.

Once outside, Captain 11 found that Engine 11 did not have a charged supply line and was still using tank water. The 2-1/2 inch line would not be charged until Engine 11 had a more reliable supply of water. The supply line was charged soon after Captain 11 came outside.

[1] The throttle control on the pump panel on Engine 11 would not operate unless it was set to its lowest position when the pump was engaged. If the hand throttle control on the pump panel was in any position other than its lowest position, the pump would engage when the controls in the cab were activated, but the hand throttle on the pump panel would not operate.

Engine 11, continued

Firefighter 11 and Engineer 11 had changed air cylinders for two firefighters outside the building. Firefighter 11 then reentered the store and followed the hose line to the back of the showroom. At some point he encountered other firefighters inside the showroom. He heard a number of transmissions on the radio about getting out of the store. Heat levels were increasing. Firefighter 11 and the other firefighters began to crawl along the hoseline toward the exterior. Heat levels increased to the point that Firefighter 11 received burns and visibility was near-zero. The air horns were blowing when he was exiting. Firefighter 11 became ill, drank some water, and then joined other firefighters on an exterior 2-1/2 inch hand line.

While he was at Engine 11, Captain 11 realized that he could not account for Firefighter 11, who he had sent to investigate the delay in charging the 1-1/2 inch handline. Captain 11 went to the exterior loading dock area looking for Firefighter 11. At that time he observed that the interior of the warehouse was well involved.

By the time Captain 11 returned to the front of the store, conditions had changed significantly and he did not reenter the structure. Battalion 5 directed Captain 11 to take Engine 19 and lay another supply line for Engine 11.

The left hand booster line from Engine 11 was pulled by a fire department mechanic on the scene and placed under the engine compartment to cool the pavement and the engine. The right hand booster line was pulled by Firefighter 15B and advanced into the interior of the store.

Engine 12

Crew:
Captain 12
Engineer 12
Firefighter 12A in the nozzle position
Firefighter 12B in the suction position

Note – This was the first fire for Firefighter 12A.

Times:
19:12:49 – Dispatch of Engine 12 requested by the Assistant Chief
19:12:53 – Dispatched to the incident
19:13:10 – Order from Battalion 4 to lay a line to Engine 10
19:13:35 – Responding from quarters
19:17:07 – Battalion 4 directs Engine 12 to lay a supply line for Engine 10.
19:17:39 – On-scene (approximate)
19:20:31 – Engineer 12 reports water coming to Engine 10
19:20:55 – Engineer 12 reports cars driving over the supply line
19:24:29 – Requests for more pressure on the supply line from the Fire Chief
19:46:28 – Engineer 12 offers to pump another supply line
20:01:04 – Engineer 12 discusses charging additional supply line

Summary:

Engine 12 was in quarters at the time of the original dispatch to the Sofa Super Store. The crew was in the process of washing the apparatus and cleaning up after dinner. Firefighters heard the dispatch and monitored the radio. Captain 12 told Engineer 12 to check the map to determine the location of fire hydrants in the area in case Engine 12 was dispatched to the scene.

The firefighters heard the arrival report of Battalion 4 indicating an exterior fire and assumed that they would not be summoned to the scene. About two minutes later, Engine 12 was dispatched to the incident at the request of the Assistant Chief. Immediately after Engine 12 was dispatched, Battalion Chief 4 called on the radio with instructions to lay a supply line for Engine 10.

As Engine 12 arrived on the scene, they saw heavy smoke from the rear of the structure. From Savannah Highway Engineer 12 was able to see clearly into the store through the front windows as they arrived. Engine 12 was directed by Battalion 4, by the Assistant Chief, and by the Fire Chief to lay a supply line to a hydrant for Engine 10. As Captain 12 dismounted the engine, he met with the Fire Chief. The Fire Chief directed Engine 12 to a nearby hydrant that was known to Captain 12. The hydrant was located at Blitchridge and First.

Engine 12, continued

Engineer 10 and Engineer 12 met in the parking lot and connected the supply line from Engine 12 to a line from Engine 10. Firefighter 12B headed to the hydrant on foot to prepare for the arrival of Engine 12. Once the connection was made, Engine 12 laid a single 2-1/2 inch supply line 850 feet to the hydrant.

Captain 12 and Firefighter 12A went to the loading dock area behind Engine 10. Firefighter 12A was ahead of Captain 12. Firefighter 12A met Battalion 4 and was directed to clamp a 1-1/2 inch attack line from Engine 10 to remove a section of hose that had burst. Once this task was completed, he was directed to break into the man door that led into the large warehouse.

When Captain 12 arrived at the rear, Engine 10 already had a 2-1/2 inch handline with a stacked tip on the ground. Battalion 4 ordered Captain 12 to help fight the fire in the loading dock area. Captain 12 helped operate a 1-1/2 inch line that was advanced into the loading dock doorway.

When Firefighter 12B finished helping Engineer 12 hook-up to the hydrant, he took a pike pole from Engine 12 and proceeded to the loading dock area. He joined Firefighter 12A at the warehouse door using a Halligan tool from Engine 10 and a flat headed axe to force the door open. A 2-1/2 inch line was brought to the doorway and firefighters flowed water into the warehouse.

Firefighter 12B used a rotary saw to attempt to cut through the large roll-up door that led into the warehouse. The saw bogged down and was unable to complete the cut. An axe was later used by a fire department mechanic to cut a hole into the rolling door into the warehouse.

The firefighters continued to flow handlines and fight fire in the loading dock and warehouse area. The firefighters reported losing water on several occasions. Captain 12 observed the compound gauge on Engine 10 at some point and saw that it read zero.

The firefighters did not hear any of the trouble or mayday reports from the interior. Engine 12's crew continued to utilize handlines to fight fire in the loading dock and warehouse, and through holes that were cut into the west showroom walls.

Captain 12 and his crew became aware that firefighters were missing as they encountered other on-duty and off-duty firefighters at the scene.

Firefighter 12B assisted with the recovery of the deceased firefighters.

Engine 15

Crew:

Captain 15
Engineer 15
Firefighter 15A in the suction position
Firefighter 15B in the nozzle position

Notes:

Fire Station 15 – 162 Coming Street – approximately 5.5 miles from the Sofa Super Store.

June 18th was Firefighter 15B's first on-duty shift with the Charleston Fire Department. Firefighter 15B had previous fire service experience in Maine and in South Carolina.

Times:

19:10:32 – Moving to Fire Station 11
19:12:31 – Ordered to continue to Fire Station 11 by the Fire Chief
19:13:31 – Ordered to respond to the fire scene by the Assistant Chief
19:13:46 – Ordered to bring a 2-1/2 inch line to the interior by the Assistant Chief
19:17:30 – Engine 15 arrives on the scene
19:21:21 – Captain 15 attempts to communicate with the Assistant Chief
19:30:22 – Last transmission, inaudible, from Captain 15's radio

Summary:

In accordance with Charleston Fire Department procedures, Engine 15 began to relocate to Fire Station 11 when the Sofa Super Store incident was dispatched. The Assistant Chief ordered Engine 15 to respond to the scene three minutes later. Firefighters could see smoke as they drove and then responded to the scene.

The apparatus was parked in the median of Savannah Highway in front of the Sofa Super Store. Captain 15, Firefighter 15A, and Firefighter 15B donned their SCBAs, secured tools, and ran to the front of the building. Engineer 15 donned his protective clothing at the scene and followed a short distance behind the others.

Engine 15, continued

Captain 15

Captain 15 conferred briefly with Engineer 11. The crew stowed some of their equipment by the front door, and then proceeded into the store. They encountered light smoke near the door and observed heavier smoke conditions deeper into the interior of the store.

A short distance into the building, Captain 15 ordered Firefighter 15B to return to the exterior of the store and bring a hose line inside. Captain 15 also ordered his firefighters to don their SCBA facepieces. Captain 15 and Firefighter 15A advanced deeper into the interior of the structure together, following the path of two hoselines, a 1-1/2 inch line and a 2-1/2 inch line. As they advanced, smoke conditions worsened markedly.

Firefighter 15B obtained a booster line from Engine 11 and advanced it into the structure. He was unable to locate Captain 15 and Firefighter 15A in the smoke.

Engineer 15

When Engineer 15 arrived at the front door of the store he noted that visibility was limited to approximately ten feet inside. He helped an unknown firefighter maneuver a 1-1/2 inch hose line inside the showroom.

Shortly after entering the store, Engineer 15's Vibralert[2] began to function. He left the building to replace his cylinder and then reentered the building. He followed the hoseline back and noted that the rear of the store had become hotter and darker since his first trip to the area.

Engineer 15 attempted to locate Captain 15 but was unsuccessful. Conditions were worsening and Engineer 15 noted a reddish glow to the rear of the store.

Engineer 15 encountered Engineer 6. They heard air horns sounding on the exterior and followed the booster line out to the door.

Once outside, Engineer 15 assisted with fire fighting operations on the exterior of the structure.

[2] Low air pressure alarm.

Engine 15, continued

Firefighter 15A

As Engine 15 arrived on the scene, Firefighter 15A observed Engine 16 dropping the supply line to Engine 11 in front of the store. Firefighters donned their protective clothing and SCBA, secured hand tools, and ran to the front door of the store.

Firefighter 15A recalls hearing a report of someone trapped at the rear of the building over his portable radio shortly after the crew entered the structure.

While Captain 15 and Firefighter 15A waited for Firefighter 15B to return with the handline, conditions continued to worsen. Captain 15 told Firefighter 15A that he hoped to contain the fire to the right rear of the store by working in the left rear area of the store. They saw or were aware that other firefighters were working to the right rear of the store.

Captain 15 ordered Firefighter 15A to go and get a handline. Firefighter 15A found a 1-1/2 inch nozzle and hoseline on the floor near a doorway and tried to move it to the area where he and Captain 15 had been working. Firefighter 15A was unable to locate Captain 15, despite shouting for him and searching the immediate area.

Firefighter 15A observed that there was little pressure in the hoseline and that it was difficult to maneuver. The line was entangled with a large amount of dislocated furniture in the area.

Firefighter 15A's Vibralert activated. He turned to walk or crawl out of the structure. As he proceeded, heat conditions markedly worsened. Thinking that he was headed into the fire, he turned 180 degrees trying to find a way out of the building. He crawled and fell over furniture for a short distance and again encountered high temperatures. Firefighter 15A stopped to listen for the sounds of apparatus, but was unable to hear due to high noise levels. Disoriented, he decided to move in one direction. He stumbled over some furniture and looked upward. Through the smoke, Firefighter 15A saw the flashing lights of a PASS device.

Firefighter 15A moved rapidly toward the lights and encountered Engineer 6. Engineer 6 guided Firefighter 15A toward the front door of the building. As they neared the exit, Firefighter 15A was able to hear apparatus noise and moved rapidly to the exit.

Engine 15, continued

Once outside, Firefighter 15A took off his facepiece. Engineer 11 replaced his air cylinder with a full cylinder. As he replaced Firefighter 15A's cylinder, Engineer 11 told Firefighter 15A that a bunch of people were lost in the building. Once the new cylinder was in place, Firefighter 15A reentered the store.

Once Firefighter 15A reentered the store, he encountered the crew of Engine 6 who were exiting. A large body of fire was visible in the interior and it was spreading toward the entrance. Firefighter 15A exited the building for the second time through a broken window to the left of the front door (from an exterior perspective). Firefighter 15A did not recall being in the building for very long on his second entry. Firefighter 15A was directed by an officer to be evaluated by emergency medical workers and was then transported to the hospital.

Firefighter 15A's personal protective clothing sustained significant thermal damage while he was inside of the structure and was removed from service.

Firefighter 15B

Firefighter 15B encountered another firefighter in the smoke, but was unsure of the identity of the firefighter. Firefighter 15B and the other firefighter moved deeper into the store, tripping over items on the floor and in proximity to other firefighters. They were able to walk upright as they moved.

Firefighter 15B did not recall making a turn while advancing the booster line. Heat conditions in the store were worsening. Alone by this time, Firefighter 15B observed a red glow though the smoke in the area of the ceiling above his head and flowed water from the booster line in the direction of the fire. He remained in that area and operated the nozzle for several minutes but did not encounter any other firefighters.

The Vibralert low air alarm in Firefighter 15B's SCBA began to activate and he made the decision to leave the structure. He estimates that he had been in the building for approximately 15 minutes at this point. Firefighter 15B dragged the booster line and nozzle toward the exit and then dropped the nozzle and followed the hose line to the exit.

As he exited the structure, heat conditions worsened and Firefighter 15B had to crawl. He encountered another exiting firefighter and directed him to his hoseline as a means of finding the exit. As he neared the exit, Firefighter 15B encountered Engineer 15 and both exited from the interior of the store.

Engine 15, continued

After exiting the store, Firefighter 15B changed his air cylinder, taking a full cylinder from Engine 11. He reentered the store, following the booster line for approximately 20 feet. He encountered other firefighters who were rapidly exiting the structure. Firefighter 15B reported that heat conditions increased markedly on his second trip into the structure.

Firefighter 15B left the structure a second time and observed fire to the right rear of the structure, over the roof line. He ran around to the right rear of the structure and participated in fire fighting operations in the warehouse and loading dock areas near Engine 10.

The remains of Captain 15 were found in a small office area at the back of the main body of the store (the original supermarket space). Captain 15 was found on his back, his carboxyhemoglobin level was 37 percent.

Captain 15 unsuccessfully attempted to communicate with the Assistant Chief at 19:21:21. The last recorded activation of his portable radio, with no discernable voice message, was at 19:30:22.

Engine 16

Crew:

Captain 16
Engineer 16
Firefighter 16in the suction position

Notes:

Fire Station 16 – 81 Ashley Hall Plantation Road – approximately 3.3 miles from the Sofa Super Store.

Engine 19 was also housed at Fire Station 16 pending the completion of Fire Station 19 later in 2007.

Engineer 5 was normally assigned as the Assistant Engineer of Engine 16 but was detailed to drive Ladder 5 the day of the fire.

Times:

19:10:26 – Moved up for standby upon initial dispatch
19:11:09 – Captain 16 acknowledges BC4 arrival report
19:12:10 – Pre-arrival order from the Assistant Chief to enter the building upon arrival
19:15:15 – Order from the Assistant Chief to bring a 2-1/2 inch handline to the interior upon arrival
19:15:19 – On the scene
19:17:36 – E16 ordered to go to a hydrant by Car 2
19:19:36 – Captain 16 requests that the 2-1/2 inch line be charged
19:21:41 – Engineer 16 tells the Assistant Chief that he is seeking a hydrant
19:22:44 – Engineer 16 tells Engineer 11 that he is seeking a hydrant
19:26:17 – Engineer 16 tells Engineer 11 that water is coming
19:29:00 – Firefighter 16 asks “Which way out?” and begins a series of distress calls and radio activations with no audio that end at 19:37:23

Summary:

Engine 16 was in quarters at the time of the initial dispatch and started out as a standby company, following the established Charleston Fire Department protocol. Upon the report of a working fire, Engine 16 began their response to the scene of the fire according to departmental procedures.

Engine 16, continued

At 19:12:10, the Assistant Chief ordered Engine 16 to the interior of the building upon their arrival. At 19:15:15, the Assistant Chief ordered Engine 16 to bring a 2-1/2 inch handline into the store upon their arrival. Captain 16 reported the arrival of Engine 16 on the scene at 19:15:19.

As Engine 16 arrived, the apparatus was parked in the center of Savannah Highway. Captain 16 and Firefighter 16 headed for the front entrance as Engineer 16 dressed. Captain 16 and Firefighter 16 began to pull 2-1/2 inch hose from the rear of Engine 11 to advance the line into the building.

When Engineer 16 reached Engine 11, Engineer 11 told him that he did not have a supply line. Captain 16 directed Engineer 16 to lay a supply line for Engine 11. The Assistant Chief ordered Engine 16 to start out toward the hydrant at 19:17:36.

As he walked to the door, Captain 16 yelled encouragement to Engineer 16. Captain 16 and Firefighter 16 stretched a 2-12 inch attack line with a stacked tip nozzle from Engine 11 into the showroom. The nozzle was positioned near the double doors that led to the loading dock. Surviving firefighters reported that Captain 16 made a comment upon his arrival at the door to the effect that firefighters would be in trouble if the fire got behind them.

At 19:19:36, Captain 16 called for the 2-1/2 inch attack line to be charged by Engine 11. Captain 16's voice indicated that he was wearing his SCBA facepiece at the time of this transmission. The Assistant Chief instructed Engineer 11 not to charge the attack line until the supply line was charged.

Engine 16 laid a single 2-1/2 inch supply line headed East on Savannah Highway toward Wappoo Road. Engineer 16 was planning to turn north on Wappoo Road to reach a hydrant that was north of the intersection. When he reached the intersection he discovered that the hydrant had been removed. He dismounted the apparatus at Wappoo Road to search on foot for a hydrant south of the intersection. After searching unsuccessfully he returned to the apparatus and continued to lay the line east toward a hydrant that was near a car dealership.

Engineer 16 used his entire bed of 2-1/2 inch supply line and added 100 feet of 3 inch hose that was rolled in a compartment to make up the supply line. The supply line from Engine 16 to Engine 11 consisted of 35 lengths of 2-1/2 inch hose and two lengths of 3 inch hose, 1,850 feet total. At 19:26:17 he called Engineer 11 to advise that the line was being charged.

Engine 16, continued

Engineer 16 reported that civilians were driving over his supply line until the street was closed by the Charleston Police Department. Prior to the arrival of the police department, civilian bystanders made a wall to prevent cars from driving over the supply line. The supply line was pressurized to over 300 psi in an attempt to push water to the scene over such a long distance.

The 2-1/2 inch attack line was charged at approximately 19:29:02, after Engine 11 received a water supply. The nozzle was found after the fire in the area in front of the double doors. The position of the nozzle suggested that it never flowed water.

Captain 16 and Firefighter 16 were last reported to be in the area where the nozzle was found, waiting for the line to be charged. For unknown reasons, Captain 16 and Firefighter 16 left this area and became disoriented in the smoke. Their remains were discovered with the remains of Engineer 5 in the west showroom, approximately 50 feet from the front of the store.

Captain 16 was found face down, his carboxyhemoglobin level was 22 percent. Firefighter 16 was found on his right side, his carboxyhemoglobin level was 66 percent.

Firefighter 16's portable radio was activated a number of times, beginning at 19:29:00. He transmitted a number of distress messages indicating that he was lost and seeking a way out of the building. The recording system also captured activations of his portable radio where no voice communication was recorded. His last discernable transmission was a prayer spoken at 19:32:40. His last system activation was at 19:37:23 although there was no discernable audio recorded at this time.

Captain 16's portable radio was last activated at 19:30:20 although no voice communication was recorded. This may have been an unintentional activation of the radio.

Engine 19

Crew:

Captain 19
Engineer 19
Firefighter 19 in the suction position

Notes:

Based at Fire Station 16 – 81 Ashley Hall Plantation Road – approximately 3.3 miles from the Sofa Super Store, until the completion of Fire Station 19 later in 2007.

Times:

19:14:45 – Dispatched from quarters - requested by Car 1
19:16:01 – Responding
19:20:08 – On the scene

Summary:

Engine 19 was in quarters at the time of dispatch.

The Assistant Chief requested the dispatch of Engine 6 to the scene at 19:14:23. The Fire Chief, who was responding to the scene, ordered Dispatch to send Engine 19 in place of Engine 6 at 19:14:45.

Very little is known about the activities of the crew of Engine 19 at the scene. The unit arrived on the scene and parked on Savannah Highway. Captain 19 spoke briefly with the Assistant Chief near the main entrance to the showrooms as they were entering. Captain 19 asked the Assistant Chief where the fire was located and was told to follow the line back into the building and to the right. Engineer 19 and Firefighter 19 were close behind Captain 19.

All three firefighters carried their portable radios into the structure. Captain 19's portable radio was not activated after Engine 19 arrived on the scene.

Engineer 19's portable radio was activated at 19:20:46 and 19:23:35 although no voice communication was recorded. These may have been unintentional activations of the radio.

Engine 19, continued

Firefighter 19's portable radio was activated on channel 2 at 19:31:55 although no voice communication was recorded. This may have been an unintentional activation of the radio.

Later in the incident, around 20:00, Engine 19's apparatus was used to supply water to Ladder 4 from a hydrant. This initially led to some confusion about the status of Engineer 19. It was assumed that he was at the hydrant pumping the truck.

The remains of Engineer 19 and Firefighter 19 were found near one another near the center of the main showroom, just over 40 feet from the front of the building and to the left of the main entrance doorways. Engineer 19 was found face down, his carboxyhemoglobin level was 12 percent. Firefighter 19 was found face down, his carboxyhemoglobin level was 39 percent.

Captain 19's remains were discovered just over 100 feet from the front entrance, at the rear of the main showroom. Captain 19 was found face down, his carboxyhemoglobin level was 48 percent.

Ladder 5

Crew:

Captain 5
Engineer 5
Firefighter 5 in the ladderman one position

Notes:

Fire Station 10 – 1 Nicholson Drive – approximately 2.3 miles from the Sofa Super Store.

Ladder 5 and Engine 10 are housed in Fire Station 10.

Firefighter 5 was working for another firefighter on Engine 10 but transferred temporarily to Ladder 5 to allow for driver and pump operations training for Firefighter 10.

Captain 5 was normally assigned as Engineer of Engine 10. On the day of the fire he was Acting Captain of Ladder 5.

Times:

19:09:02 – Dispatched from quarters
19:09:51 – Responding
19:11:07 – Acknowledges arrival report by BC4
19:12:25 – On the scene
19:15:56 – Engineer 5 calls for the 1-1/2 inch line to be charged
19:16:23 – Firefighter 5 calls for the 1-1/2 inch line to be charged
19:30:15 – Firefighter 5 transmits a distress message
19:32:15 – Engineer 5 transmits a Mayday message
19:34:18 – Engineer 5 identifies himself as the firefighter transmitting the Mayday
19:34:35 – Emergency button activation by Engineer 5
19:38:23 – Radio activation by Engineer 5 in the emergency mode

Summary:

Ladder 5 was in quarters at the time of dispatch. Captain 5 radioed Dispatch to advise that his unit was responding at 19:09:51.

Upon their arrival on the scene at 19:12:25, Ladder 5 parked in the parking lot near the entrance of the Sofa Super Store. All three firefighters dismounted the apparatus.

Ladder 5, continued

Captain 11 radioed from the interior of the store that a handline was needed at 19:13:17. Upon learning that a handline was needed in the interior, the crew of Ladder 5 summoned Engine 11 to the front door of the store. The crew stretched a 250 foot 1-1/2 inch handline through the front door of the store. After an additional 250 feet of line was added, the nozzle ended up at the set of double doors that led from the right-hand showroom addition to the staging area.

At the time of the fire, the standard Charleston Fire Department engine carried two preconnected handlines. Each line was composed of 250 feet of 1-1/2 inch hose with an Akron Turbojet nozzle, without pistol grip. The standard setting for these nozzles for the Charleston Fire Department was 60 gpm.

At 19:15:56, Engineer 5 called for the line to be charged. This was followed by a call from Firefighter 5 for the line to be charged at 19:16:23. An abnormality with the pump engagement for Engine 11 delayed the charging of the 1-1/2 inch handline.

Based on reports from surviving firefighters, the crew of Ladder 5 operated the 1-1/2 inch handline into the staging area. The water stream was being used to control the fire in the staging area and attempt to prevent the spread of the fire into the retail area of the store. Some time after the hoseline was charged, the crew of Engine 16 arrived with a 2-1/2 inch handline.

For unknown reasons, the Ladder 5 crew left their operating position and became disoriented in the building.

Captain 5 was not equipped with a portable radio while inside of the Sofa Super Store. His radio was found on the apparatus and utilized by firefighters that moved Ladder 5 into a field adjacent to the store to operate as a water tower.

Engineer 5 transmitted a Mayday message at 19:32:15. At 19:34:18, he identified himself as the firefighter that had called the Mayday. At 19:34:35, he depressed the orange emergency button on his portable radio.

The activation of the emergency button sounds an audible alarm in the dispatch center and alerts the dispatcher to the emergency. At 19:34:40, a dispatcher alerted firefighters on the scene of the fire that Engineer 5's emergency button had been activated. At 19:38:23, Engineer 5 pressed the transmit button on his portable radio. This action sounded an alarm in the dispatch center for the second time. The emergency signal was cleared from dispatch at 19:40:09.

Ladder 5, continued

Firefighter 5 activated his radio a number of times, some without a discernable voice message. These may have been inadvertent activations. Firefighter 5 transmitted a distress message at 19:30:15 identifying himself and requesting help for himself and other firefighters.

Captain 5's remains were found approximately 100 feet inside of the main showroom of the Sofa Super Store, directly at the back of the store from the main entrance. Captain 5 was found face down, his carboxyhemoglobin level was 65 percent.

Engineer 5's remains were found in the right-hand retail area addition approximately 50 feet from the front of the store. He was found in close proximity to Captain 16 and Firefighter 16. Engineer 5 was found face down, his carboxyhemoglobin level was 58 percent.

Firefighter 5's remains were found in an office or storage space at the very rear of the original supermarket structure. Firefighter 5 was found face down in a kneeling or crawling position, his carboxyhemoglobin level was 31 percent.

Saint Andrews Engine 2 and Rescue 1

Crew:

Engine 2 - Captain Saint Andrews Engine 2, Firefighter Saint Andrews Engine 2 (SA2)

Rescue 1 – Saint Andrews Rescue 1 Drive (SA1), Saint Andrews Rescue 1 Firefighter

Saint Andrews Assistant Chief

Times:

19:25:18 – Saint Andrews Engine 2 calling Charleston dispatch (on Charleston channel 1)

Summary:

Engine 2, Rescue 1, and the Saint Andrews Assistant Chief were celebrating the birthday of Captain Saint Andrews Engine 2. The firefighters were at an Asian restaurant near the intersection of 526 and Savannah Highway, approximately one half mile from the Sofa Super Store.

The Saint Andrews Assistant Chief received a telephone call from an off-duty Saint Andrews Fire Department captain asking if they were enroute to the fire on Savannah Highway. Expecting to be called for mutual aid, the Saint Andrews Assistant Chief told his firefighters to get ready to get toned out for the fire. The firefighters paid for their meal and made their way outside to their apparatus.

When firefighters left the restaurant and got outside, they were immediately able to see the smoke plume from the fire. The firefighters got into their vehicles and headed for the scene.

While enroute to the scene, Captain Saint Andrews Engine 2 radioed Charleston dispatch but did not receive a response. The Saint Andrews Assistant Chief, Engine 2, and Rescue 1 parked at the scene of the fire.

As the Engine and Rescue firefighters dressed, the Saint Andrews Assistant Chief went out ahead of the firefighters and met the Fire Chief in the alley leading to the loading dock area.

Saint Andrews, continued

Saint Andrews Assistant Chief

The Saint Andrews Assistant Chief met up with the Fire Chief in the alley on the west side of the fire building. The Saint Andrews Assistant Chief told the Fire Chief that he had firefighters on the scene and responding and asked how he could help. The Fire Chief initially declined his offer of help. A moment later he assigned Saint Andrews to fire fighting duties for the warehouse and exposures off of Pebble Road.

As the Saint Andrews Assistant Chief was driving around to Pebble Road, he received a call from Captain Saint Andrews Engine 2 requesting a thermal imaging camera. The Saint Andrews Assistant Chief drove back to the scene, assuming that the camera had been requested by the Fire Chief.

When he arrived back at the scene, the Saint Andrews Assistant Chief made contact with the Fire Chief and offered him the thermal imager. The Fire Chief told him that he did not need the imager and had not called for it. The Saint Andrews Assistant Chief returned to Pebble Road to supervise operations at that location.

Saint Andrews firefighters (Engine 1) forced a door on the North side of the warehouse and entered to make an assessment with a thermal imaging camera. They determined that the warehouse was well involved with fire and that a defensive approach was appropriate.

On the order of the Saint Andrews Assistant Chief, evacuation air horns were sounded by apparatus on Pebble. Horns were also heard sounding from the front of the fire on Savannah Highway.

Engine 2 and Rescue 1

The engine and rescue crews received orders from the Saint Andrews Assistant Chief on the Saint Andrews radio channel to report to the loading dock. As they walked toward the loading dock, a police officer told them that his dispatcher had notified him of a civilian trapped in the building. At the same time, Battalion 5 walked up to the crew and they discussed the trapped civilian.

The Saint Andrews firefighters ran across the front of the fire building and down the alley on the east side to a wooden fence gate that blocked their access to the rear of the building. Captain Saint Andrews Engine 2 called the Saint Andrews Assistant Chief and requested the thermal imager that was in the Saint Andrews Assistant Chief's vehicle.

Saint Andrews, continued

The Saint Andrews firefighters, the Assistant Chief, Battalion 5 and two store managers gained access to the area behind the store and listened for banging. The store managers indicated the area where the trapped civilian would be located. They located the room where he was trapped after hearing banging on a wall. The metal side of the building was cut open by Battalion Chief 5 and a Saint Andrews firefighter and the civilian was removed. The civilian was brought around to the front of the building by Saint Andrews Firefighters SA1 and SA2 and turned over to an off-duty paramedic. EMS was notified of the person's location.

The Saint Andrews firefighters went to the front door of the store seeking an assignment. The Fire Chief and Car 303 were at the front door when the firefighters arrived and there were discussions going on that involved firefighters in distress and Maydays. Firefighters were exiting the building at the same time.

The Fire Chief and the Assistant Chief ordered the removal of all of the glass from the front of the store. Captain Saint Andrews Engine 2 and Firefighter SA1 removed the glass from the windows to the right of the entrance. In the process, Captain Saint Andrews Engine 2 received a cut to his hand. As the windows were broken, air was drawn into the building.

After the windows were broken, the Fire Chief ordered the Saint Andrews firefighters to enter the building and search for the firefighters in distress. Firefighter SA1 and Firefighter SA2 donned their SCBA facepieces and entered the front of the store. They followed a hose line straight back into the building. Firefighters SA1 and SA2 encountered Car 303 on their way in to the structure. Captain Saint Andrews Engine 2 established accountability for his personnel at the entrance and called for the RIT equipment to be brought to that location from his apparatus.

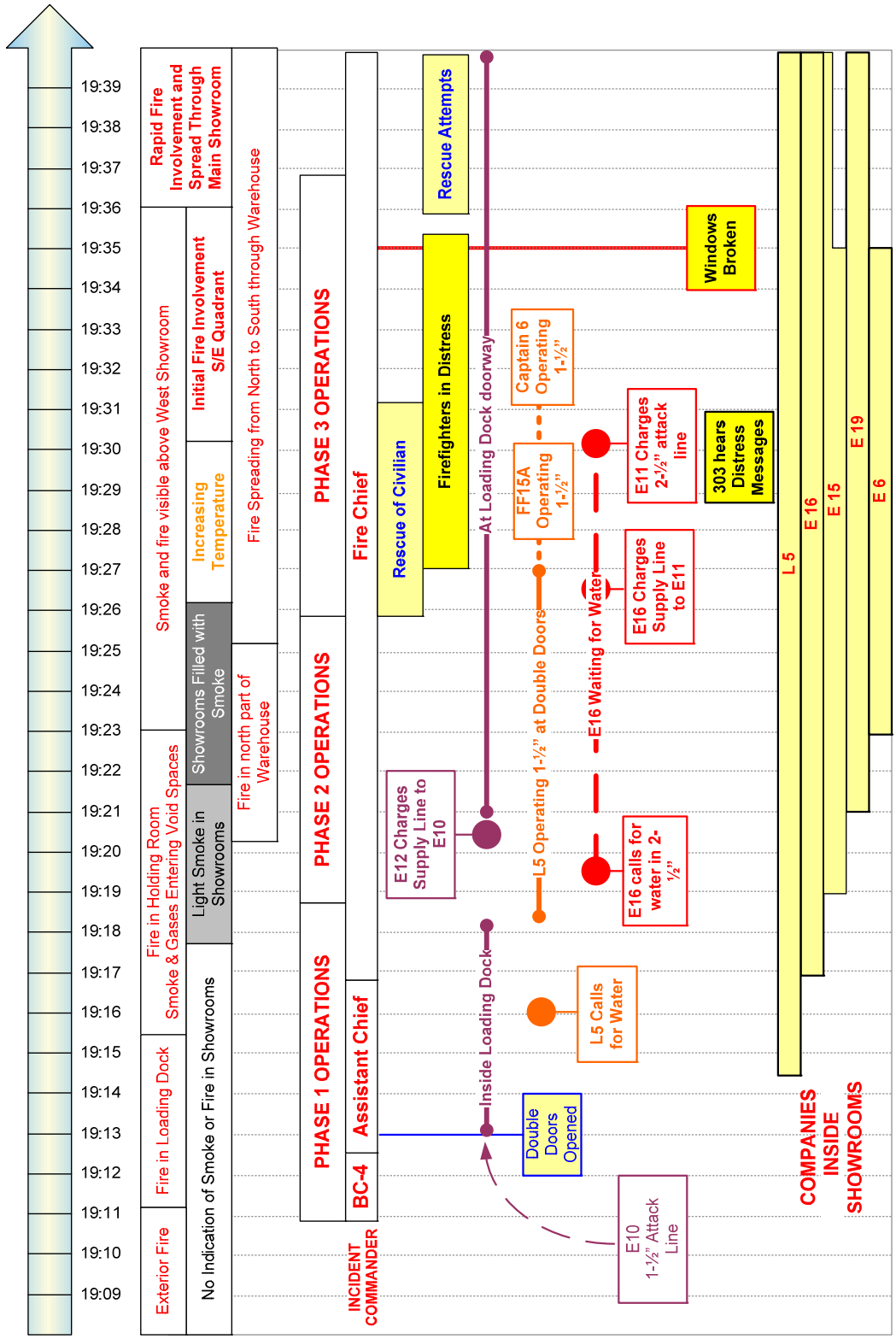
Firefighters SA1 and SA2 reported that they encountered high heat conditions inside the main showroom. They also reported that they encountered other firefighters, at least one of whom was in distress and was not wearing a helmet. They stated that they attempted to pull the firefighter in distress toward the front exit. Heat conditions worsened markedly as the fire began to advance toward them and both Saint Andrews firefighters began to receive burns. Firefighter SA1 reported that he lost his hold on the firefighter in distress. Firefighters SA1 and SA2 then exited the building via the main entrance.

As they exited the building, they observed fire coming across the store from the general direction of the loading dock. As they emerged, air horns were being sounded for evacuation.

Saint Andrews, continued

Firefighter SA1 was treated for his burns. All of the Saint Andrews firefighters joined the other members of their department and assisted with fire fighting operations on Pebble Road through the completion of the incident.

Appendix D - Detailed Timeline



Timeline

19:09:02 – Initial Dispatch

19:10:46 – Battalion 4 arrives

19:11:35 – Car 2 on the scene (first portable radio transmission)

19:11:40 – Engine 10 on the scene

19:12:22 – Ladder 5 on the scene

19:13:17 – Engine 11 Captain requests an attack line

1-1/2 inch handline from E11 advanced into the retail area of the store by L5

19:15:19 – Engine 16 on the scene

Engine 16 advances a 2-1/2 inch attack line into the interior of the store

19:16:32 – Car 1 on the scene

19:17:30 – Engine 15 on the scene

Interior of the store filled with smoke (reports from E15 crews)

19:17:39 – Engine 12 on the scene

19:20:08 – Engine 19 on the scene

19:20:31 – Water supplied by E12 to E10

19:21:50 – Engine 6 on the scene

~19:22:31 - Flames seen from the roof of the retail area from the perspective of the field to the right of the store.

19:24:09 – Battalion 5 on the scene

19:26:17 – Water supplied by E16 to E11

19:26:35 – Dispatcher advises Car 1 of a report of a civilian trapped in the building

19:27:44 – First indication of trouble from inside the store

19:29:02 – Engine 11 charges the 2-1/2 inch handline

19:29:27 – Saint Andrews E4 on the scene

19:30:15 – Firefighter inside the store reports that he needs help.

19:31:19 – Battalion 5 reports that the civilian has been rescued.

19:33:01 – First indication from Chief Thomas that firefighters are in trouble

19:33:43 – Ladder 5 is moved from the front of the store and backs into the lot to the right of the store

19:34:18 – Last word from a firefighter in trouble in the interior of the store

19:34:40 – Ladder 5 Engineer's emergency alarm received

~19:34:40 – Chief Thomas orders an evacuation

19:34:55 – Chief Thomas arrives at the front of the store

19:35:14 – Engine 6 exits the building

19:35:25 – Windows at the front of the store broken

19:37:37 – Fire appears at the front windows of the store

19:37:51 – Air horns sounding

19:38:21 – Saint Andrews firefighters exit the building

Appendix E – Communications System Information

Introduction

The Charleston Fire Department utilizes an analog trunked radio system with a single tower site for signal reception and transmission. The system is a 16 channel Motorola SmartNet Type II system. The same system is used by the Charleston Fire Department, the Charleston Police Department, and other city departments.

Each fire apparatus is equipped with a mobile radio and every on-duty firefighter and command officer on each engine, ladder, and command unit is provided with a portable radio. A number of firefighters and officers have personally assigned radios that they carry while off-duty. At the time of the Sofa Super Store fire, most firefighters were not equipped with a lapel microphone and firefighters generally carried their portable radio in a breast pocket on the exterior of their protective clothing, or in another exterior pocket.

Trunked Radio Systems

Trunked radio systems are repeater-based radio communications systems that are composed of multiple radio frequencies controlled by a central system computer controller. The controller assigns radio frequency pairs to conversations as needed, when needed. Trunked radio systems assign a frequency pair as it is needed rather than permanently dedicating a frequency pair for each “channel”. This reduces the number of radio frequencies needed to operate a system and generally increases the utilization of each frequency. Especially in developed areas, the demand for radio frequencies is high.

In non-trunked radio systems, a frequency pair is essentially reserved for the exclusive use of one channel.

For all trunked and many non-trunked fire service radio communication systems, every radio channel on the radio uses two radio frequencies, a pair, to communicate. The user sends information to the radio system on one frequency and the radio system repeats the transmission back to the radios on that channel through another frequency. Trunking assigns frequencies as needed while non-trunked radio systems reserve frequencies for the use of one channel.

Trunked radio systems use the term “talkgroup” to replace the term “channel” as the frequency pair assigned to a work group. For example, a talkgroup could be designated for fire dispatch, another for fireground operations, and others for police, utility services, etc. On the Charleston Fire Department standard portable radio, the talk group was selected by the user utilizing a rotating knob on the top of the portable radio. The radio essentially looks the same to the user but channel utilization differs from non-trunked to trunked systems.

In a trunked radio system, when a firefighter presses the push-to-talk button on a portable radio to transmit on a talkgroup, a request is made to the trunked radio system on the control channel. The control channel essentially listens for radios that want to transmit and then tells all of the radios that are on the same talkgroup as the radio requesting to speak which frequency pair will be used. This action happens instantaneously and is generally barely noticed by the radio user.

Once assigned to a frequency pair, the firefighter transmits a voice message to the system on one of the two assigned frequencies. The radio system repeats the voice transmission back to all of the other radios on the same talkgroup through the second assigned frequency so that the voice message is heard by all others that have the same talkgroup selected.

Charleston Fire Department Radio System Configuration

The Charleston Fire Department radio system was configured in a way that allowed more than one firefighter to speak at one time. This type of configuration is called a “message trunking operation”. In many trunked radio systems, the system locks out all other system users once someone starts to speak and only allows others to speak when the first person is done. This second type of configuration is called “transmission trunking operation”.

The Charleston configuration allowed firefighters transmitting at the same time to “walk over” one another. If another firefighter on the same talkgroup transmits at the same time that the first firefighter is transmitting, both firefighter’s radios transmit simultaneously. This leads to transmissions “walking” over one another. In some cases, this produces partial transmissions or unintelligible noise due to an interference effect called heterodyning. Heterodyning can sound like a buzzing noise, clicking, or a hum that changes in pitch over a few seconds.

In other cases only one transmission will be received by the system and will be retransmitted correctly. Due to the fact that portable radios transmit to the radio system on one frequency and receive on a separate frequency, all system users on one talk group hear the same transmission from the repeater assigned to the talkgroup regardless of the number of radios transmitting at the same time.

In general, the radio system repeats the strongest signal that is received at the radio tower. There is one exception. Transmission by a dispatcher from the radio console takes precedence over any other received signal.

System Activity Logging

The Motorola SmartNet Type II system keeps track of the activity on the trunking system with a computerized logging application called System Watch. This log contains an activity time stamp, the identity of the radio making the request for transmission, the talkgroup, the type of transmission, the physical repeater channel assigned and the duration of the transmission. System Watch also logs other activity such as radio power on/off, talkgroup (channel) changes, as well as other system activity. Emergency Alarm and Emergency Call activations, and radio console resets of the alarms are logged in the System Watch logs. For the Sofa Super Store incident, the time recorded by the System Watch log is 2 minutes and 2 seconds ahead of actual time. All System Watch times in this report have been corrected to actual time.

If more than one firefighter transmits simultaneously and "walks over" firefighter(s) that are already transmitting, the System Watch configuration in use for the Charleston Fire Department may not capture the information from both radios. There are several instances related to the Sofa Super Store incident, especially during the time when firefighters are in distress, when the identity of those speaking cannot be confirmed without a doubt. When the identity of who is speaking can be confirmed with reasonable certainty, the name of the transmitter is included in the radio log that is a part of this report. When the identity of the transmitter is uncertain, the transmitter is listed as "unknown".

Voice Logging Recorder

The Charleston Fire Department dispatch center also uses a voice logging recorder to record voice transmissions handled by the trunked radio system and the phone system in dispatch center. These voice recordings are the basis for the transcription generated for this report.

System Emergency Features

All transmissions on the radio system are shown on the dispatcher's console with the identity of the last several radio transmitters displayed. The dispatcher can glance at this rolling log if he or she misses the identity of a transmitter. As additional transmissions are received, the oldest transmitter identification scrolls off of the screen. The data for this listing is from the same source as the data that is recorded by System Watch.

The trunked radio system has two features related to emergency transmissions. The first, Emergency Alarm, transmits an alarm message to the system when the orange emergency button on a portable radio is pressed. The message is transmitted over the control channel, not the assigned voice channel, so it can be activated when there is voice activity on the talkgroup selected on the radio. When the Emergency Alarm is received by the system, it activates an audible

alarm and displays the identity of the unit that activated the alarm at the radio console position in the dispatch center. The dispatcher can mute this alarm using a button on the console display.

The second feature related to emergency transmissions is the Emergency Call. Emergency Call is activated when a firefighter transmits on a talkgroup using a radio that has transmitted an Emergency Alarm and has not been reset. When an Emergency Call is received by the system it puts the talkgroup into Emergency Call mode. This mode causes the repeater assigned to the talkgroup to remain assigned to the talkgroup for an extended time and causes activation of the Emergency Alarm alert at the radio console if it is not already active. Once an Emergency Call is received by the system, all firefighter's transmissions on the talkgroup will be considered Emergency Calls until the Emergency Call is reset by the radio console operator (dispatcher). If the Emergency Call has been reset at the console, further Emergency Call transmissions by the radio in emergency will reactivate the alarm. The radio can only be reset from Emergency mode by holding the orange button in for an extended (programmable) period of time.

At the Sofa Super Store fire, the Ladder 5 Engineer, Michael French, activated his orange emergency button at 19:34:35. A dispatcher announced this event on the radio. The emergency mode was reset at dispatch at 19:35:34. Ladder 5 Engineer Michael French pressed his push-to-talk button at 19:38:23. Since his portable radio had not been reset, the emergency mode was reinstated. The emergency mode was reset at dispatch for a second time at 19:40:09.

System Interference

"Skip" or "ducting" are phenomena where a radio transmission can travel over long distances and be received by another radio system utilizing the same radio frequency. Some skip incidents have been reported where a transmission is received hundreds of miles from where it originates.

Radio systems have measures in place to prevent "skip" from interfering with communications. Despite these measures, radio transmissions from outside of the immediate network do make it through.

During the Sofa Super Store incident there is a transmission on the logging recorder that appears to involve police activity. The transmission has been tracked to the police department in Saint Simons Island, Georgia. A search of the FCC license database shows licenses to the Glynn-Brunswick 911 center that appears to serve the Saint Simons Island area. Saint Simons Island is in Glynn County, Georgia. The "skip" or "ducting" occurs at approximately 19:22:28.

The license shows one frequency pair 866.0375 MHz/821.0375 MHz that apparently matches a frequency in the city of Charleston trunked radio system. Saint Simons Island is approximately 144 miles from Charleston, over water, and the transmitter location may be closer.

A plausible explanation for the interference is that at the same time that the frequency was assigned by the Charleston trunked radio system to a firefighter's call, the frequency was in use by a Glynn County user as well. The Charleston trunked radio system could have received this spurious transmission and retransmitted it in place of or in addition to the correct transmission. The transmission must have been received by the Charleston system, or it would not have been recorded by the voice logging recorder.

Operational Specifics

Each fire apparatus is equipped with a mobile radio and every on-duty firefighter and command officer on each engine, ladder, and command unit is provided with a portable radio. A number of firefighters and officers have personally assigned radios that they carry while off-duty. At the time of the Sofa Super Store fire, most firefighters were not equipped with a lapel microphone and firefighters generally carry their portable radio in a breast pocket on the exterior of their protective clothing, or in another exterior pocket.

Dispatch, non-emergency administrative, and emergency operations are generally conducted on a single talkgroup designated CFD-1. Three additional talkgroups, designated CFD-2, CFD-FG1 and CFD-4, are available but are rarely used.

There were reports from firefighters in Charleston that they heard transmissions from firefighters inside of the Sofa Super Store that cannot be heard on the recordings of radio transmissions made at the dispatch center. Considering the design of the system, this is not possible if the firefighters were on a trunked talkgroup, as it is technically impossible for a receiving radio to receive a transmission directly from the radio.

Charleston Fire Department Dispatch System

The Charleston Fire Department utilizes a dispatch operation that is co-located with the Charleston Police Department in the police headquarters building. 911 callers speak first with a Police Department call taker. Calls for the Fire Department are transferred to a Fire Department dispatcher.

At the time of the Sofa Super Store incident, two fire dispatchers were on-duty. At the time of the fire, on-duty dispatcher staffing varied from one to two dispatchers on-duty. The dispatchers utilize a computer aided dispatch system to select units for response. The Charleston Fire Department responds to selected types of emergency medical incidents based on criteria worked out collectively with Charleston County EMS (CCEMS). The emergency medical ambulance system for the entire county is operated by CCEMS.

On-duty firefighters monitor channel one at all times for dispatch. A pre-alert message is transmitted by dispatch, followed by tones, and a repeat of the dispatch information. All communications are conducted by voice.

At the time of the Sofa Super Store fire, the standard response to a structural fire was two engine companies, a ladder company, and a command officer. Depending upon the area of the city where an incident occurred, engine companies would automatically move up to areas vacated by responding units. Some move ups occurred upon dispatch and some upon the report of a working fire. Generally, units from the city's center move to peripheral areas as units based in those areas respond to emergency incidents. This coverage routine also occurs to cover vacancies created by non-emergency activities such as training.

The response of additional units past the initial response and automatic move ups are dispatched upon the specific request of the officer in command of an incident. Greater alarm assignments, where multiple units are dispatched as a group to an incident, are not utilized.

Appendix F - Hydraulic Calculations and Water Flow Analysis

The Charleston Fire Department Standard Operating Procedure called for booster lines to be operated at 40 gpm. Preconnected 1-1/2" hand lines were equipped with combination fog nozzles, set to deliver 60 gpm at 100 psi nozzle pressure. If a higher flow rate was required, the firefighter was permitted to switch the nozzle to the 95 gpm setting and direct the pump operator to increase the pressure accordingly.

The Standard Operating Procedure called for 2-1/2" hand lines to be equipped with either combination fog nozzles or straight bore "stacked" tips:

- Combination nozzles were to be set to deliver 150 gpm at 100 psi nozzle pressure. If a higher flow rate was required, the firefighter was authorized to switch the nozzles to the 200 gpm or 250 gpm settings and direct the pump operator to increase the pressure accordingly.

- Straight bore (stacked tip) nozzles were to be carried with the 1" tip in place and operated at 75 psi nozzle pressure to deliver 256 gpm. If a higher flow rate was required, the firefighter could switch to a 1-1/8" tip to deliver 290 gpm at 60 psi nozzle pressure or to a 1-1/4" tip to deliver 310 gpm at 45 psi nozzle pressure.

The 2-1/2" line that was taken through the front of the building as well as the two 2-1/2" lines that operated into the warehouse were all equipped with stacked tips. Each of these lines was expected to flow 256 gpm.

None of the firefighters or officers who were interviewed reported any request to increase the flows on any of the attack lines.

The Charleston Fire Department Standard Operating Procedure called for water to be delivered from engines at hydrants to engines in attack positions through single 2-1/2 inch supply lines. The supply line was to be pumped at a maximum of 200 psi by the engine at the hydrant. Both Engine 16 and Engine 12 exceeded the 200 psi recommendation in response to requests for more pressure in the supply lines to Engine 11 and Engine 10.

The following calculations show that the single 2-1/2 inch supply lies were incapable of delivering the flows required by the hose lines that Engines 10 and 11 were attempting to operate. Increasing the pressure beyond the maximums recommended for safety could not overcome the friction loss in the supply lines.

Estimated Flow Requirements:

Engine 10:

1”	40 gpm
1-1/2”	60 gpm
2-1/2”	256 gpm
2-1/2”	256 gpm
Total	612 gpm

Engine 11:

1”	40 gpm
1-1/2”	60 gpm
2-1/2”	256 gpm
Total	356 gpm

Supply Line Friction Loss Calculations

E12 (to E10):

850 ft of 2-1/2’ hose @ 200 psi working pressure
Friction loss at 300 gpm = 8.5 X 19.5 = 165.8 psi
350 gpm = 8.5 X 26.5 = 225.3 psi
400 gpm = 8.5 X 34.6 = 294.1 psi
500 gpm = 8.5 X 54.1 = 459.9 psi
600 gpm = 8.5 X 77.9 = 662.2 psi

E16 (to E11):

1750 ft of 2-1/2” hose + 100 ft of 3” hose @ 200 psi working pressure
Friction loss at 200 gpm = (17.5 X 8.7) + 3.4 = 155.6 psi
250 gpm = (17.5 X 13.5) + 5.4 = 241.6 psi
300 gpm = (17.5 X 19.5) + 7.7 = 360.7 psi
350 gpm = (17.5 X 26.5) + 10.5 = 474.7 psi

Appendix G: Building and Code Enforcement Information

Building Classification

The Sofa Super Store building was classified under the Standard Building Code 1991 – 1994 editions. It was classified as follows:

Construction Type - IV
Occupancy Type - Mercantile

Building History

The original building was annexed into the City of Charleston on August 22, 1990. The following additions were subsequently made to the original structure:

- The western addition was permitted in December 1993 and required fire rated doors to maintain access and fire separation according to the Standard Building Code 1991-1994.

- The eastern addition was permitted in March 1995 and required fire rated doors to maintain access and fire separation according to the Standard Building Code 1991-1994.

- The east and west additions were considered as separate buildings according to the Building Code due to the construction of the walls of the original building and the installation of fire rated doors.

- The floor area of each individual building was less than the maximum area permitted without sprinklers.

- The rear warehouse addition was permitted in January 1996. It was of non-combustible construction and designed to meet loads in accordance with the provisions of the 1986 MBMA Building Code. It was also designed in accordance with the 1989 AISC (with 1989 amendments) and codes specified.

- This warehouse building was 120’x130’x29’ in size. The floor area of 15,600 square feet was less than the maximum area permitted without sprinklers.

- When the warehouse was constructed, the owner requested two variances from Table 600 of the SBC and from the Code of the City of Charleston, Section 7.1.1:

    - To omit the required 2 hour fire rating for the west wall. (Code requires a wall within 30' of a property line to have a 2 hour fire rating.)

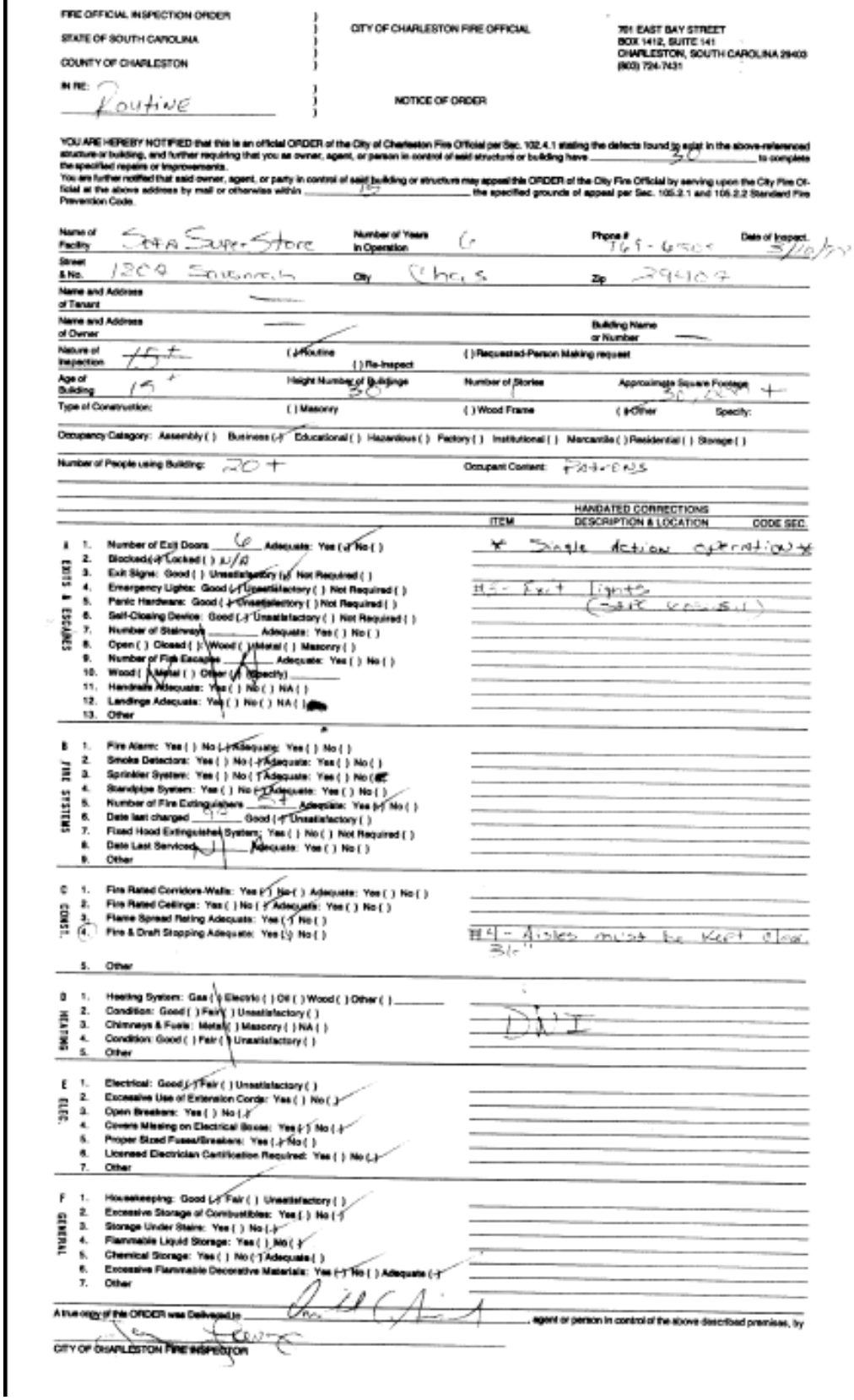
    - To omit the required 2 hour fire rating for the north wall. of the building to omit the required fire rating. (Code requires a wall within 30' of a property line to have a 2 hour fire rating.)

- The two variances were granted under the following conditions:

    - The owner agreed to abandon the property line between the warehouse and the main building, eliminating the need for the north wall to be fire rated

    - A 3 hour fire rated door was required at the point where the connecting corridor was attached to the existing building

- The record shows that the owner did not apply for any additional construction permits after January 1996.



FIRE OFFICIAL INSPECTION ORDER
STATE OF SOUTH CAROLINA
COUNTY OF CHARLESTON

CITY OF CHARLESTON FIRE OFFICIAL

701 EAST BAY STREET
BOX 1412, SUITE 141
CHARLESTON, SOUTH CAROLINA 29403
(803) 724-7431

IN RE: Routine

NOTICE OF ORDER

YOU ARE HEREBY NOTIFIED that this is an official ORDER of the City of Charleston Fire Official per Sec. 102.4.1 stating the defects found to exist in the above-referenced structure or building, and further requiring that you as owner, agent, or person in control of said structure or building have 30 to complete the specified repairs or improvements.
You are further notified that said owner, agent, or party in control of said building or structure may appeal this ORDER of the City Fire Official by serving upon the City Fire Official at the above address by mail or otherwise within 10 the specified grounds of appeal per Sec. 105.2.1 and 105.2.2 Standard Fire Prevention Code.

Name of Facility: Sofa Super Store | Number of Years in Operation: 6 | Phone #: 769-6500 | Date of Inspect.: 3/10/98
Street & No.: 1209 Savannah | City: Chas. | Zip: 29407
Name and Address of Tenant: —
Name and Address of Owner: — | Building Name or Number: —
Nature of Inspection: Rt | (✓) Routine | ( ) Re-Inspect | ( ) Requested-Person Making request
Age of Building: 19+ | Height Number of Buildings: 3 | Number of Stories: 3 | Approximate Square Footage: 30,000+
Type of Construction: | ( ) Masonry | ( ) Wood Frame | (✓) Other | Specify:
Occupancy Category: Assembly ( ) Business (✓) Educational ( ) Hazardous ( ) Factory ( ) Institutional ( ) Mercantile ( ) Residential ( ) Storage ( )
Number of People using Building: 20+ | Occupant Content: Furniture

		ITEM	MANDATED CORRECTIONS DESCRIPTION & LOCATION	CODE SEC.
A EXITS & EGRESS	1. Number of Exit Doors 6 Adequate: Yes (✓) No ( ) 2. Blocked ( ) Locked ( ) N/A 3. Exit Signs: Good ( ) Unsatisfactory (✓) Not Required ( ) 4. Emergency Lights: Good ( ) Unsatisfactory (✓) Not Required ( ) 5. Panic Hardware: Good (✓) Unsatisfactory ( ) Not Required ( ) 6. Self-Closing Device: Good (✓) Unsatisfactory ( ) Not Required ( ) 7. Number of Stairways ____ Adequate: Yes ( ) No ( ) 8. Open ( ) Closed ( ) Wood ( ) Metal ( ) Masonry ( ) 9. Number of Fire Escapes ____ Adequate: Yes ( ) No ( ) 10. Wood ( ) Metal ( ) Other (✓) (Specify) ____ 11. Handrails Adequate: Yes ( ) No ( ) NA ( ) 12. Landings Adequate: Yes ( ) No ( ) NA ( ) 13. Other		* Single action operation #3 - Exit lights (one not lit)	
B FIRE SYSTEMS	1. Fire Alarm: Yes ( ) No (✓) Adequate: Yes ( ) No ( ) 2. Smoke Detectors: Yes ( ) No (✓) Adequate: Yes ( ) No ( ) 3. Sprinkler System: Yes ( ) No (✓) Adequate: Yes ( ) No ( ) 4. Standpipe System: Yes ( ) No (✓) Adequate: Yes ( ) No ( ) 5. Number of Fire Extinguishers 24 Adequate: Yes (✓) No ( ) 6. Date last charged 9/97 Good (✓) Unsatisfactory ( ) 7. Fixed Hood Extinguished System: Yes ( ) No ( ) Not Required ( ) 8. Date Last Serviced N/A Adequate: Yes ( ) No ( ) 9. Other			
C CONST.	1. Fire Rated Corridors-Walls: Yes (✓) No ( ) Adequate: Yes ( ) No ( ) 2. Fire Rated Ceilings: Yes ( ) No ( ) Adequate: Yes ( ) No ( ) 3. Flame Spread Rating Adequate: Yes (✓) No ( ) 4. Fire & Draft Stopping Adequate: Yes (✓) No ( ) 5. Other		#4 - Attics must be kept clear. 3/6 "	
D HEATING	1. Heating System: Gas ( ) Electric ( ) Oil ( ) Wood ( ) Other ( ) ____ 2. Condition: Good ( ) Fair ( ) Unsatisfactory ( ) 3. Chimneys & Fuels: Metal ( ) Masonry ( ) NA ( ) 4. Condition: Good ( ) Fair ( ) Unsatisfactory ( ) 5. Other		D.N.I	
E ELEC.	1. Electrical: Good (✓) Fair ( ) Unsatisfactory ( ) 2. Excessive Use of Extension Cords: Yes ( ) No (✓) 3. Open Breakers: Yes ( ) No (✓) 4. Covers Missing on Electrical Boxes: Yes (✓) No ( ) 5. Proper Sized Fuses/Breakers: Yes (✓) No ( ) 6. Licensed Electrician Certification Required: Yes ( ) No (✓) 7. Other			
F GENERAL	1. Housekeeping: Good (✓) Fair ( ) Unsatisfactory ( ) 2. Excessive Storage of Combustibles: Yes ( ) No (✓) 3. Storage Under Stairs: Yes ( ) No (✓) 4. Flammable Liquid Storage: Yes ( ) No (✓) 5. Chemical Storage: Yes ( ) No (✓) Adequate ( ) 6. Excessive Flammable Decorative Materials: Yes (✓) No ( ) Adequate (✓) 7. Other			

A true copy of the ORDER was Delivered to [signature] agent or person in control of the above described premises, by [signature]
CITY OF CHARLESTON FIRE INSPECTOR

Figure 16: Fire Inspection Report, dated March 10, 1998

Information Learned from Investigation

The following information was obtained by the City of Charleston Building Inspections Division during the investigation of the Sofa Super Store fire:

- Between 1996 and the time of the fire, additions were constructed in the area between the warehouse and the showroom buildings, including the enclosed loading dock.

- After the fire the City's GIS division examined aerial photos taken between 1998 and 2007. The photos showed creeping construction beginning with a shed roof and small enclosed structures. These photos also showed the progression of the construction including a completely enclosed loading dock and other rooms added to the rear of the building.

- The building owner was apparently aware of the City of Charleston's permit process, due to the fact that he applied for permits and variances for various projects from 1991 – 1996. These permits were for projects as small as a fence and signage as well as larger projects such as building modifications, renovations and additions.

- The City of Charleston removed the requirement for annual fire inspections of mercantile occupancies from its code in 2000.

- The building was last inspected by a City of Charleston fire inspector on March 30, 1998. At that time the building owner was cited for the following violations:
    - exit light violation
    - aisle space violations
    - unsatisfactory exit signs

- The following notations were included in the 1998 inspection report:
    - no chemical or flammable liquid storage was found on the premises
    - all electrical and mechanical systems including the roll-up fire doors were in satisfactory condition
    - there were no housekeeping issues

- Charleston Fire Department personnel visited the store on multiple occasions between 1998 and 2007 for pre-fire planning purposes. A Sofa Super Store employee noted that they made some safety and prevention suggestions during their visits.

- Roll-down doors designed for fire separation were made by two different manufacturers.
    - Each roll-down door had two fusible links.

- The following uses were not permitted in the building:
    - Hazardous Materials storage
    - Spray paint/finish application
    - Combustible liquid storage

- Smoking was common in and around the store.

Code Violations

The analysis of the Sofa Super Store performed by the City of Charleston Building Inspections Division identified the following potential or suspected code violations at the time of the fire.

- The “in-fill” construction that occurred after 1996, including the enclosed loading dock, occurred without building permits and without the knowledge of the City of Charleston.

- The construction of the “in-fill” additions was not consistent with the classification of the existing buildings. (The additions were wood frame construction.)

- The construction of the “in-fill” additions did not comply with the building code.

- The additions negated the agreed-upon conditions of the variances that had been granted.

- The additions negated the effectiveness of the required fire separations between the pre-existing structures. (In the absence of the required separations, automatic sprinklers would have been required.)

- Large quantities of flammable liquids such as naphtha; cleaning and finishing chemicals; fabric surface coatings and aerosol containers of flammable finish products were stored and used on the premises. Quantities of these materials were found in the area of the loading dock.

- Roll-down fire doors in required fire separations did not operate properly.

- When the illegal modifications to the buildings were made, required exits were eliminated.

- There were exits through storage areas.
- Some of the exit doors were illegally locked.
- It was reported that non-permitted electrical work was done by employees who were not licensed electricians.

South Carolina Code of Laws
(Unannotated)
Current through the end of the 2007 Regular Session

SECTION 6-9-130.

Codes applicable to building inspections.

(A) Buildings must be inspected in accordance with the codes in effect for the locality on the date of the issuance of the original building permit, except that:

(1) If no date of issuance of original building permit can be found, the date of submission of the completed application to the local authority must be used.

(2) If no date of application for, or date of issuance of, building permit is available, the director of the applicable county planning and development service (or similar agency) shall determine the nearest possible date by using available documents, such as transfer of property records, mortgage records, tax records, or rent records.

(B) A building inspection conducted in conjunction with any change in structure must be performed in accordance with the applicable code in effect on date of application or date of permit.

(C) A building inspection conducted in conjunction with a change of use for the building or space must be performed in accordance with the applicable code in effect on the date of the inspection. This inspection should be done with the intention of avoiding extreme hardship to the owner whenever practical.

City of Charleston Municipal Code

ARTICLE II. BUILDING CODE*

*Cross references: Electrical code, § 12-16 et seq.; fire prevention code, § 13-76 et seq.; plumbing code, § 24-16 et seq.

Sec. 7-26. International Building Code--Adopted.

The International Building Code, 2000 Edition, published by the International Code Council, Inc., including appendices A, B, C, E, F, H, I, and *J* only, is hereby adopted so that hereafter all building construction, reconstruction, alteration and repairs and all materials and appliances used in connection with building work shall conform thereto; provided however, that A101.4 in Appendix A is hereby deleted and the following shall be substituted in its place and stead: "The City of Charleston hereby avails itself of the exemptions as set forth in S.C. Code Ann. § 6-9-50 and 60 as it pertains to the qualification, removal, dismissal and administrative procedure for personnel employed by the City to enforce its construction codes, it being the intent of the City that such persons hold their employment positions in accordance with the general law of South Carolina.

Sec. 13-80. Licensing.

No person shall engage in the business of installation, alteration or repair of fire protection systems in the city unless he shall have first secured an installation of fire protection systems license and shall have otherwise complied with the requirements for securing such license as the same may, from time to time, be promulgated by the city council.

Section 105.1 Permit Application

Any owner, authorized agent, or contractor who desires to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by the technical codes, or to cause any such work to be done, shall first make application to the building official and obtain the required permit for the work.

EXCEPTION: Permits shall not be required for the following mechanical work:

1. any portable heating appliance;

2. any portable ventilation equipment;
3. any portable cooling unit;
4. any steam, hot or chilled water piping within any heating or cooling equipment regulated by this code;
5. replacement of any part which does not alter its approval or make it unsafe;
6. any portable evaporative cooler;
7. any self-contained refrigeration system containing 10 lb (4.54kg) or less of refrigerant and actuated by motors of 1 horsepower (746 W) or less.

Section 105.2 Repairs

Application or notice to the building official is not required for ordinary repairs to structures, replacement of lamps or connection of approved portable electrical equipment to approved permanently installed receptacles. Such repairs shall not include the cutting away of any walls, partitions, or portions thereof, the removal or cutting of any structural beam, load bearing support, or the removal or change of any required means of egress, or rearrangement of parts of a structure affecting the means of egress requirements; nor shall ordinary shall ordinary repairs include addition to, alteration of, replacement or relocation of any standpipe, water supply sewer, drainage, drain leader, gas, soil, waste, vent or similar piping, electrical wiring or mechanical or other work affecting public health or general safety.

Section 105.2.1 Work Authorized

A building, electrical, gas, mechanical or plumbing permit shall carry with it the right to construct or install the work, provided the same are shown on the drawings and set forth **in** the specifications filed with the application for the permit. Where these are not shown on the drawings and covered by the specifications submitted with the application, separate permits shall be required.

A permit issued by the building official shall be construed to be authorization to proceed with the work in accordance with all the building codes of the City of Charleston. The omission of information on the plans or permit application shall not be construed as authority to violate, cancel, alter, or set aside any of the provisions of the Code, the compliance of which shall remain the responsibility of the applicant and or owner. The Building Official retains the right after issuance of the permit to require a correction of errors in plans or in construction, or correction of violation of the Codes of the City of Charleston.

International Fire Code

SECTION 107 MAINTENANCE

107.1 Maintenance of safeguards.

Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, or any other feature is required for compliance with the provisions of this code, or otherwise installed, such device, equipment, system, condition, arrangement, level of protection, or other feature shall thereafter be continuously maintained in accordance with this code and applicable referenced standards.

107.5 Owner/occupant responsibility.

Correction and abatement of violations of this code shall be the responsibility of the owner. If an occupant creates, or allows to be created, hazardous conditions in violation of this code, the occupant shall be held responsible for the abatement of such hazardous conditions.

Hazards related to use and occupancy, and not those related to fixed equipment or installations, fall within the scope of the occupants' responsibility. Owners, however, may become liable if they allow the unlawful operation or continuation of a public nuisance on a property under their control, especially if they knowingly or willfully lease the property in violation of fire, zoning or building regulations.

The simple rule for determining what constitutes an owner's, rather than the occupants', responsibility is whether or not the issue involves fixed equipment installations or if the structure is separate from those items related to occupancy. The owner is usually responsible for the physical maintenance of the building or structure and its utilities and appurtenances (that is, building services and systems).

703.4 Testing.

Horizontal and vertical sliding and rolling fire doors shall be inspected and tested annually to confirm proper operation and full closure. A written record shall be maintained and be available to the fire code official.

_Annual tests are intended to determine that required fire and smoke-barrier doors operate freely and close completely. Where fusible links are used as the releasing mechanism, the link may be temporarily removed rather than activated during testing. Fusible links in poor condition must be replaced as part of the maintenance of fire-resistance components. Smoke detectors and heat detectors other than fusible links must be tested as required by the manufacturer's instructions (see NFPA 72 for recommended testing procedures for various fire

detectors). Written records must indicate the date, time, test method and person conducting the test for each opening protective. These records must be maintained by the owner and made available to the fire code official for review. This requirement relieves the fire code official of the administrative burden of maintaining test records.

704.2 Opening protectives.

When openings are required to be protected, opening protectives shall be maintained self-closing or automatic-closing by smoke detection. Existing fusible-link-type automatic door-closing devices are permitted if the fusible link rating does not exceed 135ºF (57ºC).

This section requires that fire door assemblies provided for protection of openings in vertical enclosures be self-closing or automatic closing in order to maintain the integrity of the vertical opening enclosure.

This section also recognizes that some opening protectives in existing buildings may already be equipped with heat-actuated closing devices rather than the smoke-detector-actuated devices otherwise required by the section. Such devices are allowed to continue in service, provided that the temperature rating of their fusible element is as low as is available [i.e., 135°F (57°C)] to provide the fastest possible operation in the event of a fire. In the event that an existing fusible link on an opening protective is rated higher than the maximum 135°F (57°C) allowed by this section, it would need to be removed and the door maintained as self-closing or be replaced with a smoke-detector-actuated closer in accordance with this section. New opening protectives must comply with Section 715 of the IBC and closing devices with 715.4.7 of the IBC. See the commentary to those sections for further information.

704.3 Buildings on the same property and buildings containing courts.

For the purposes of determining the required wall and opening protection and roof-covering requirements, buildings on the same property and court walls of buildings over one story in height shall be assumed to have a property line between them.
Exceptions: In court walls where opening protection is required, such protection is not required provided:

1. Not more than two levels open into the court;
2. The aggregate area of the building, including the court, is within the allowable area; and
3. The building is not classified as Group I.

Where a new building is to be erected on the same property as an existing building, the location of the assumed property_ line with relation to the existing building shall be such that the exterior wall and opening protection of the existing building meet the criteria as set forth in Sections 704.5 and 704.8.

Exception: Two or more buildings on the same property shall either be regulated as separate buildings or shall be considered as portions of one building if the aggregate area of such buildings is within the limits specified in Chapter 5 for a single building. Where the buildings contain different occupancy groups or are of different types of construction, the area shall be that allowed for the most restrictive occupancy or construction.

704.5 Fire-resistance ratings.

Exterior walls shall be fire-resistance rated in accordance with Tables 601 and 602. The fife-resistance rating of exterior walls with a fire separation distance of greater than 5 feet (1524 mm) shall be rated for exposure to fire from the inside. The fire-resistance rating of exterior walls with a fire separation distance of 5 feet (1524 mm) or less shall be rated for exposure to fire from both sides.

704.6 Structural stability.

The wall shall extend to the height required by Section 704.11 and shall have sufficient structural stability such that it will remain in place for the duration of time indicated by the required fire-resistance rating.

704.8.1 Automatic sprinkler system.

In buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the maximum allowable area of unprotected openings in occupancies other than Groups H-1, H-2, and H-3 shall be the same as the tabulated limitations for protected openings.

704.8.2 First story.

In occupancies other than Group H, unlimited unprotected openings are permitted in the first story of exterior walls facing a street that have a fire separation distance of greater than 15 feet (4572 mm), or facing an unoccupied space. The unoccupied space shall be on the same lot or dedicated for public use, shall not be less than 30 feet (9144 mm) in width, and shall have access from a street by a posted fire lane in accordance with the *International Fire Code.*

714.1 General.

Opening protectives required by other sections of this code shall comply with the provisions of this section.

714.2 Fire door and shutter assemblies.

Approved fire door and fire shutter assemblies shall be constructed of any material or assembly of component materials that conforms to the test requirements of Section 714.2.1, 714.2.2 or 714.2.3 and the fire-protection rating indicated in Table 714.2. Fire door assemblies and shutters shall be installed in accordance with the provisions of this section and NFPA 80.

Exceptions:

1. Labeled protective assemblies that conform to the requirements of this section or UL 10A, UL 14B and UL 14C for tin-clad fire door assemblies.
2. Floor fire doors shall comply with Section 711.4.6.

714.2.4 Doors in exit enclosures.

Fire door assemblies in exit enclosures shall have a maximum transmitted temperature end point of not more than 450°F (232°C) above ambient at the end of 30 minutes of standard fire test exposure.

> **Exception:** The maximum transmitted temperature end point is not required in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

714.2.7.2 Automatic-closing fire door assemblies.

Automatic-closing fire door assemblies shall be self-closing in accordance with NFPA 80.

715.3 Fire door and shutter assemblies.

Approved fire door and fire shutter assemblies shall be constructed of any material or assembly of component materials that conforms to the test requirements of Section 714.2.1, 714.2.2 or 714.2.3 and the fire-protection rating indicated in Table 714.2. Fire door assemblies and shutters shall be installed in accordance with the provisions of this section and NFPA 80.

Exceptions:

1. Labeled protective assemblies that conform to the requirements of this section or UL 10A, UL 14B and UL 14C for tin-clad fire door assemblies.
2. Floor fire doors shall comply with Section 711.4.6.

715.3.7 Door closing.

Fire doors shall be self-closing or automatic-closing in accordance with this section.

Exception: Fire doors located in common walls separating guestrooms in Group R-1 hotels and motels shall be permitted without automatic-closing or self-closing devices.

1008.1.8 Door operations.

Except as specifically permitted by this section egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

_ When installed for security purposes, locks and latches can intentionally prohibit the use of an egress other operating devices on doors required to be accessible by Chapter 11 of the *International Building Code* shall not require tight grasping, tight pinching or twisting of the wrist to operate.
_ Any doors that are located along an accessible route for ingress or egress must have door hardware that is easy to operate by a person with limited mobility. This would include all elements of the door hardware used in typical door operation, such as door levers, locks, security changes, etc. This requirement is also an advantage for persons with arthritis in their hands. Items such as small, full-twist thumb turns or smooth circular
knobs are examples of hardware that is not acceptable.

1008.1.8.2 Hardware height.

Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.

Exception: Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided the self-latching devices are not also self-locking devices operated by means of a key, electronic opener or integral combination lock.

The requirements in this section place the door hardware at a level that is usable by most people, including a person in a wheelchair. The exception allows security locks to be placed at any height. An example would be an unframed glass door at the front door of a tenant space in a mall that has the lock near the floor level.

The lock is only used when the store is not open for business. Such locks are not required for the normal operation of the door. The exception permits a special allowance for security latches at pools, spas and hot tubs. The concern is that the 48-inch (1219 mm) maximum height would place the security latch within reach of children. The 54-inch (1372 mm) maximum height is intended to override the maximum 48-inch (1219 mm) reach range in ICC A117.1. This compromise addresses both concerns for children's safety and still maintain accessibility to a reasonable level.

1008.1.8.3 Locks and latches.

Locks and latches shall be permitted to prevent operation of doors where any of the following
exists:

1. Places of detention or restraint.

2. In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in places of religious worship, the main exterior door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:

2.1. The locking device is readily distinguishable as locked,

2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating:

THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED.

The sign shall be in letters 1 inch (25 mm) high on a contrasting background,

2.3. The use of the key-operated locking device is revocable by the fire code official for due cause.

3. Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware.

4. Doors from individual dwelling or sleeping units of Group R occupancies having an occupant load of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.

Where security and life safety objectives conflict, alternative measures, such as those permitted by each of the exceptions, may be applicable.

Exception 1 is needed for jails and prisons.
Exception 2 permits a locking device, such as a double-cylinder dead bolt, on the main entrance door.

Such locking devices must have an integral indicator that automatically reflects the “locked” or “unlocked” status of the device. In addition to being an indicating lock, a sign must e provided that clearly states that the door is to be unlocked when the building is occupied. The sign on the door not only reminds employees to unlock the door, but also advises the public that an unacceptable arrangement exists if one finds the door locked. Ideally, the individual who encounters the locked door will notify management and possibly the fire code official. Note that the use of the key-locking device is revocable by the fire code official. The locking arrangement is not permitted on any door other than the main exit and, therefore, the employees, security and cleaning crews will have access to other exits without requiring the use of a key. This allowance is not limited just to multiple-exit buildings but also to small buildings with one exit. This option is an alternative to the panic hardware required by Section 1008.1.9 In Exception 3, an automatic flush bolt device is one that is internal to the inactive leaf of a pair of doors. The device has a small “knuckle” that extends from the inactive leaf into an opening in the active leaf. When the active leaf is opened, the bolt is automatically retracted. When the active leaf is closed, the knuckle is pressed into the inactive leaf by the active leaf, extending the flush bolt(s), in the head or sill of the inactive leaf (see Figure 1008.1.8.3). Automatic flush bolts on one leaf of a pair of egress doors are acceptable, provided the leaf with the automatic flush bolts is not equipped with a door knob or other hardware that would imply to the user that the door leaf is unlatched independently of the companion leaf. Exception 4 addresses the need for security in residential units. The occupants are familiar with the operation of the indicated devices, which are intended to be relatively simple to operate without the use of a key or tool. Note that this exception only applies to the door from the dwelling unit.

1008.1.8.4 Bolt locks.

Manually operated flush bolts or surface bolts are not permitted.
Exceptions:
1. On doors not required for egress in individual dwelling units or sleeping units.
2. Where a pair of doors serves a storage or equipment room, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf.

_ This section is applicable to doors that are intended and required to be for means of egress purposes or are identified as a means of egress, such as by an "Exit" sign or other device. Doors, as well as a second leaf in a doorway that is provided for a purpose other than means of egress, such as for convenience or building operations, should be arranged or identified so as not to be mistaken as a means of egress. This section prohibits installation of manually operated flush and surface bolts except in an individual dwelling or sleeping unit. Even then, such bolts may only be used on doors not required for egress (see Section 1008.1.8.3, Exception 4 for security of doors from individual dwelling and sleeping units). Flush and surface bolts represent locking devices that are difficult to operate because of their location and operation (see Figure 1008.1.8.4). The exceptions provide for edge-mounted or surface-mounted bolts on the inactive leaf of a pair of door(s) from these limited use areas.

1008.1.8.5 Unlatching.

The unlatching of any door or leaf shall not require more than one operation.
Exceptions:
1. Places of detention or restraint.
2. Where manually operated bolt locks are permitted by Section 1008.1.8.4.
3. Doors with automatic flush bolts as permitted by Section 1008.1.8.3, Exception 3.
4. Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by Section 1008.1.8.3, Exception 4.

The code prohibits the use of multiple locks or latching devices on a door, which would be a safety hazard in an emergency situation. The exceptions address locations where multiple locks or latching devices are acceptable.

903.2.6 Group M.

An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:
1. Where a Group M fire area exceeds 12,000 square feet (1115 m2);
2. Where a Group M fire area is located more than three stories above grade plane; or
3. Where the combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m2).

The sprinkler threshold requirements for Group M occupancies are identical to those of Group F-1 and S-1 occupancies (see commentary, Section 903.2.3).

Automatic sprinkler systems for mercantile occupancies are typically designed for an Ordinary Hazard Group 2 classification in accordance with NFPA13. If high-piled storage (see Section 903.2.6.1) is anticipated, however, additional levels of fire protection may be required.

Also, some merchandise in mercantile occupancies, such as aerosols, rubber tires, paints and certain plastic commodities, even at limited storage heights, are considered beyond the standard Class I through IV commodity classification assumed for mercantile occupancies in NFPA 13 and may warrant additional fire protection.

903.2.6.1 High-piled storage.
An automatic sprinkler system shall be provided as required in Chapter 23 in all buildings of Group M where storage of merchandise is in high-piled or rack storage arrays.

Regardless of the size of the Group M fire area, an automatic sprinkler system may be required in a high-piled storage area. High-piled storage includes piled, palletized, bin box, shelf or rack storage of Class I through IV combustibles to a height greater than 12 feet (3658 mm) and certain high-hazard commodities greater than 6 feet (1829 mm). Storage of combustible materials to heights more than that noted above must meet the requirements of Chapter 23 and referenced standard NFPA 13.

NFPA – 80

GENERAL REQUIREMENTS FOR FIRE DOORS

Section 5.1.3.1 of NFPA-80 states that fire doors should be operable at all times.
Section 5.2.14.1 of NFPA-80 states that self-closing devices (i.e. door closers) should be kept in working condition at all times.

REQUIREMENTS FOR MAINTENANCE OF FIRE DOORS

Section 5.1.5.1 of NFPA-80 states that fire door repairs should be made, and defects that could interfere with operation should be corrected without delay.

Section 5.2.12.1 of NFPA-80 states that guides and bearings should be kept well lubricated to facilitate operation.

> Section 703.2 of the IFC states that fire doors should be maintained in an operative condition in accordance with NFPA-80.

Section 703.2.2 of the IFC states that hold-open devices and automatic door closers, where provided, should be maintained. During the period that such a device is out of service for repairs, the door it operates should remain closed but operable.

REQUIREMENTS FOR INSPECTING AND TESTING FIRE DOORS

Section 5.2.1 of NFPA-80 states that fire door assemblies should be inspected and tested not less than annually, and a written record of the inspection should be signed and kept for inspection by the AHJ.

Section 5.2.2.1 of NFPA-80 states that as an alternate means of compliance with 5.2.1, subject to the AHJ, fire door assemblies should be permitted to be inspected, tested, and maintained under a written performance-based program.

Section 5.2.2.2 of NFPA-80 states that goals established under a performance-based program should provide assurance that the fire door assembly will perform its intended function when exposed to fire conditions.
Section 5.2.2.3 of NFPA-80 states that technical justification for inspection, testing, and maintenance intervals should be documented.

Annex J. and J.2 of NFPA-80 state that equivalent levels of performance can be demonstrated through quantitative performance-based analyses, subject to the approval of the Authority Having Jurisdiction, e.g. fire marshal. The concept of a performance-based program is to establish the type and frequency of inspection to demonstrate that the assembly is operational. The goal is to balance the inspection frequency with proven reliability of assembly. (For additional information on performance-based programs please see annex J of NFPA-80).

Section 5.2.3.1 of NFPA-80 states that functional testing of fire doors should be performed by individuals with knowledge and understanding of the operating components of the type of door being subject to testing.

Section 5.2.3.2 of NFPA-80 states that before testing, a visual inspection should be performed to identify any damaged or missing parts that could create a hazard during testing or affect operation or resetting.

Section 5.2.4.2 of NFPA-80 states that as a minimum, the following items should be verified for swinging doors with builders hardware or fire door hardware:

1. No open holes or breaks exist in surfaces of either the door or frame.

2. Glazing, vision light frames, and glazing beads are intact and securely fastened in place, if so equipped.

3. The door, frame, hinges, hardware, and noncombustible threshold are secured, aligned, and in working order with no visible signs of damage.

4. No parts are missing or broken.

5. Door clearances at the door edge to the frame, on the pull side of the door, should not exceed the following clearances:

a) The clearance under the bottom of a door should be a maximum of 3/4 inch.
b) Where the bottom of the door is more than 38 in. above the finished floor, the maximum clearance should not exceed 3/8 inch or as specified by the manufacturer's label service procedure.
c) The clearance between the top and vertical edges of the door and the frame, and the meeting edges of doors swinging in pairs, should be 1/8 inch +/- 1/16 for steel doors and should not exceed 1/8 inch for wood doors.

6. The self-closing device is operational, that is, the active door completely closes when operated from the full open position.

7. If a coordinator is installed, the inactive leaf closes before the active leaf.

8. Latching hardware operates and secures the door when it is in the closed position.