Internal Investigation into the Line of Duty Deaths

Fire Apparatus Operator Larry Leggio

Firefighter John Mesh

KCFD

One Team, One Job, One Mission

October 12, 2015

2608 Independence Avenue

KANSAS CITY
MISSOURI

Office of the Fire Chief

Fire Headquarters

Century Towers
635 Woodland Avenue, Suite 2100
Kansas City, Missouri 64106

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Dear Colleagues,

The Kansas City, Missouri Fire Department has a proud and long history of serving the citizens and visitors of this City. The members of KCFD have committed unselfishly to putting their lives on the line every day. On October 12, 2015 Fire Apparatus Operator Larry Leggio and Firefighter John Mesh lost their lives in the line of duty. I have assigned an internal investigation team to construct a report which contains the facts and issues surrounding this event. The report covers the incident from the time of dispatch to the moment of collapse which took the lives of our brothers and friends.

This document is not intended to lay blame or find fault, it is simply a compilation of facts and data, wherein we can learn and hopefully prevent a similar incident from occurring.

I would like to thank the families of FAO Larry Leggio and Firefighter John Mesh. Because of the danger inherent with fighting fires, these families have endured the ultimate sacrifice. The spirit of these two individuals and their tremendous contribution to their respective stations, co-workers and members of the department will never be forgotten. We the members of the Kansas City, Missouri Fire Department truly have had the honor to serve with FAO Leggio and Firefighter Mesh. Both of these gentlemen never complained but understood the importance of what is asked in the line of duty to the community in which we serve.

I am proud of what the members, residents, and governing body of Kansas City, Missouri have done to support this Fire Department. I would first like to take this opportunity to personally thank the members of this department. Your dedication, devotion, and allegiance to the citizens of the city, to one another and the overall department, ensure that we will continue to heal from this tragic event. I also thank the citizens of Kansas City, Missouri for their continued support of the Kansas City, Missouri Fire Department. The outpouring of public support was overwhelming to the members of our department and the families of our dear brothers. I thank those who took the time to ask their questions and have discussions about how to better their fire department.

I would further like to thank the members of the KCFD Investigation Team for their commitment in spending many hours working on this investigation. Donating their time within their busy schedules and utilizing their collective talents, is greatly appreciated.

It is my belief that in providing a report which contains the facts, issues and how the department has responded in the aftermath is the most important service we can deliver to our citizens and the men and women of the Kansas City, Missouri Fire Department.

Sincerely,

Paul Berardi

Paul Berardi
Fire Chief

INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS

OF GREATER KANSAS CITY, MISSOURI LOCAL UNION NO. 42

6320 Manchester Avenue, Suite 42A
Kansas City, MO 64133
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March 01, 2016

Dear Brothers and Sisters,

I have the honor of representing the members of the International Association of Firefighters, Local No. 42. In the years since the members of the Kansas City Fire Department organized in 1918, tragedy has been no stranger to our members. We have lost many in the line of duty; that truth never makes the death of a firefighter easier, especially the loss of our Brothers Larry Leggio and John Mesh, the first loss during my tenure as President.

These men can be best described with words such as: dedication, courage, and commitment; and now, sacrifice. I would like to express my heartfelt sympathy to the families of Larry Leggio and John Mesh. My words are not adequate enough to express the sorrow I, and the membership of this Union, feel for your loss.

Health, Wellness, and Safety are one of many duties comprising the mission of this great Union. The members of this Union have a long tradition in participating as active members of a Labor Management Team. Our partners on this team and on this mission include The International Association of Firefighters Local 3808, and the Kansas City Fire Department command staff; all of whom commissioned this investigation. This team had assistance and resources from many internal and external sources, and for that, please know our appreciation. Through investigation and the adoption of key recommendations, it is our hope that this report will improve the lives of firefighters and the communities they protect. The goal of this investigation was to produce a report that can aid in the core mission of the Union, and the Department, in protecting those who protect our community and our City.

Though the loss of Larry and John on the tragic day of October 12th, 2015, created a void in our hearts that will never be filled, we can find solace in our memories of them.

Again, I would like to thank all those who assisted in this investigation. In your work, you have honored our brothers.

Yours in service,

William J. Galvin
President

WJG/ps/opeiu277

International Association of Fire Fighters

Local 3808 Kansas City Chief Officers
2800 Cherry
Kansas City, MO 64108

Fellow Brothers and Sisters, Colleagues, and Professionals;

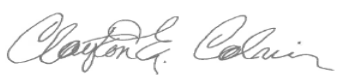
On October 12th, 2015 the Kansas City, Missouri Fire Department experienced a stunning loss. Two of our dedicated brothers and friends of mine perished while battling a blaze in Old Northeast. This is not the first tragedy our department has had to face in its long, lustrous history nor will it likely be our last.

With that being said our Fire Chief and Locals 42 and 3808 have teamed up to create a body to review the events of October 12th to come up with recommendations in the hope we can forestall any tragedy such as this from touching our lives again. This group of members and management has devoted countless hours of work to complete the task that was asked of them. The stacks of reports and standards to review seemed insurmountable in themselves. Couple that with the firsthand accounts from the After Action Review and the information from the Bureau of Alcohol, Tobacco, and Firearms and you get an idea of the massive task load of the working group. In addition to that task load was the emotional weight this incident carries and the personal nature of which many on the group knew the fallen. I want to thank each member of the group for doing a job that was exhausting, heart breaking, and what I hope will be worth all of the sweat and tears that were shed in this endeavor.

The intent of this report is not to condemn any person who was on the scene the night of the fire but instead to learn from this tragedy and move forward as a group better than we were before. Larry and John can continue to contribute to the jobs they loved so much in this document and the memories of those who knew them.

My condolences go out to Stations 10 and 17, the members who were close to the brothers, but most importantly to the Mesh and Leggio families. There is not a day I don't think of you and the sacrifice you made. This document is dedicated to all of you in the hopes we never have any such disaster strike us again.

Clay Calvin



President
IAFF Local 3808

Member(s) Bio

FAO LARRY LEGGIO

Last Alarm October 12th, 2015

FAO Larry Leggio died October 12th, 2015, as a result of injuries sustained in the line of duty, at a multi alarm response to a building fire at 2608 Independence Avenue, Kansas City, Missouri. Larry was assigned as a Fire Apparatus Operator on Truck 2, aka *The Deuce*, C shift.

Larry's father, Angelo Leggio, was a 17-year veteran of KCFD. Growing up Larry was fascinated by this line of work and dreamed of becoming a firefighter. In May of 1998, Larry was hired by KCFD and this dream became a reality. His first assignment at Station 23 on Independence Avenue allowed him to work in his childhood neighborhood. As his career progressed, Larry was moved to Station 17, where he remained until his passing on the tragic day of October 12th, 2015.

Aside from fighting fires, Larry's dedication and loyalty was with his wife Missy, his family, and his close friends. Together, Larry and Missy enjoyed everything from family vacations to charity motorcycle rides. The eagerness Larry had when he began his career as a firefighter never dwindled. Missy shared this eagerness and love, watching her husband doing the job he loved with the people he loved. Throughout the Kansas City Fire Department, many Brothers and Sisters came to know them both as family.

Larry's outgoing personality, recognizable smirk, and active participation in Union events and charity functions made him well-known and well-liked on the job. Larry genuinely and whole heartedly embodied the title *firefighter*, which he carried with an unassuming, natural pride. This loss is felt from those that knew him best to those he met only for moment, as even brief interactions with Larry were often memorable. He could easily bring a smile to anyone's face and, despite his passing, we will continue to smile as we look back on our time spent together.

The International Association of Firefighters, Locals 42 and 3808 and The Kansas City Fire Department extend their deepest condolences to the family of Larry Leggio and to his Brothers and Sisters on the Kansas City Fire Department.

Member(s) Bio

FF JOHN MESH

Last Alarm October 12th, 2015

Firefighter John Mesh died October 12th, 2015, as a result of injuries sustained in the line of duty at a multi alarm response to a building fire at 2608 Independence Avenue, Kansas City Missouri. John was assigned as a firefighter on Pumper 10, B shift.

John was born and raised in Old Northeast in Kansas City. John was the youngest of eight siblings. He married the love of his life, Felicia, and together they had four beautiful daughters. Hunting was one John's favorite hobbies, something he shared with his father and brother, and was passing on to his daughters. John was proud of all of his girls, and was active in all their school and extracurricular events. John was the complete embodiment of family-man.

In 2002, John became a firefighter with the Kansas City Fire Department. When he wasn't around family or friends, John was quiet and reserved, though it didn't take long to figure out what type of person he was. John was humble, polite, and modest. His coworkers and family knew him as a strong, brave, highly intelligent person who was proficient in his job and vigilant when it came to the safety of his crew, though he would never openly admit to any of those things. John was the guy everyone knew they could depend on, whether that meant help at the station or in the midst of a working fire. John was a firefighter's firefighter who was a leader both in the firehouse and on the fireground. He was the guy you wanted to see when you turned around. John was assigned to Pumper 10, B shift where he remained and had been working on a shift trade on the tragic day of October 12th, 2015.

The International Association of Firefighters, Locals 42 and 3808 and The Kansas City Fire Department extend their deepest condolences to the family of John Mesh and to his Brothers and Sisters on the Kansas City Fire Department.

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Acknowledgements

The Kansas City, Missouri Fire Department wishes to thank the following individuals for all their efforts and dedication through the difficult process of examining the circumstances involved in the line of duty deaths occurring October 12, 2015. The Kansas City, Missouri Fire Department's goal is to identify any causal factors and recommend appropriate corrective actions as it pertains to this tragic event.

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Assistant Chief of Department Jeff Grote
Team Leader and Investigator

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Union Local 3808 Designee
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Deputy Chief Todd Ackerson

Deputy Chief Vincent Boucher

Deputy Chief Jeff Johnson

Battalion Chief Damon Barkley
Document Group

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Battalion Chief Brian Trickey
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Special Acknowledgements

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Lead Coordinator CFIC Robert Looper
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Scene/Forensic Mapping Lenwood Reeves
Scene/Forensic Mapping Ken Whiteley
Safety Officer Kelley Etinier
Scene Chemist Meghan Miller
Scene/Electrical Engineer EE Mike Keller
Scene/Electrical Engineer Richard Alarcon
Scene/Medic Donnie Mann
PIO John Ham
Peer Support/Scene Jon Hansen
Lead/Interpreter Hoang Nguyen
Forensic Auditor/Interpreter Nicole Nguyen-Murley
Technical Surveillance Specialist Steve Greene
Polygrapher Chase Bynog
And the many other ATF Personnel

Kansas City Missouri Police Department
Major Joe McHale
Major James Connelly
Major Robin Houston, K-9
Master Patrol Officer Erich Hellerich
Captain Daniel Gates
Captain Michael Perne
Captain Roy True
Sergeant James Gottstein
Sergeant Ronald Podraza
Sergeant Kari Thompson
Sergeant Mark Bentz

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Sergeant Matthew Payne
Sergeant Bryan Truman
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Detective Rick Hulme
Detective Sondra Hults
Detective Bryan Jobe
Detective Lowell Lacy
Detective Mike Luster
Detective Greg Mosier
Detective Chris Skinner
Detective Jay Thompson
Detective Lex Wallace
And our many Police Officer Brothers & Sisters
Civilian Lynsay Holst

Kansas City, Missouri Police Department's Bomb and Arson Unit

Missouri State Fire Marshal's Office

Missouri Search and Rescue (MOSAR)

Industrial Wrecking Company

Belger Cartage Service Inc.

Kansas City Public Works

Kansas City Power & Light

Fire Investigator Division of the Kansas City, Missouri Fire Department

We are indebted to all of our colleagues who aided in the compilation of this narrative. Your insight, expertise, and resources greatly assisted in the conducive conditions of the investigative team's assignment. The investigative team wishes to thank the following KCFD companies; Truck 2, Truck 5, Truck 6, Truck 12, Rescue 9, Pumper 23, Pumper 24, Pumper 27, Pumper 35, the KCFD Communications Center and Command Staff. These personnel unselfishly gave their time to provide factual information and eyewitness testimony. Without this information, much of this report would not have been possible. Their input was and is valued and greatly appreciated.

Overview of the Kansas City, Missouri Fire Department

The Kansas City, Missouri Fire Department consists of uniformed and civilian employees who provide fire protection, emergency medical service, emergency rescue, hazardous materials response, and community risk management for the residents of Kansas City, Missouri. The Department stands committed to deliver their very best with each opportunity to serve.

Led by Fire Chief Paul Berardi, KCFD delivers emergency services to the citizens of Kansas City, Missouri across 319 square miles from 34 fire stations that are organized into seven battalions. The department's integrated system of response includes fire apparatus and ambulances stationed strategically throughout the city. This system is designed to place fully trained emergency medical technicians quickly at the patient's side in any life threatening emergency. Every emergency responder in our system, whether riding a fire engine or an ambulance is trained to the EMT level or beyond to ensure that care will always be available. The department responds to approximately 110,000 emergency calls per year.

The department is organized into bureaus that include: Professional Development, Technical Services, Special Operations, Emergency Operations, Systems Support and the Emergency Medical Bureau. An Assistant Chief of Department or Deputy Chief manages each of the bureaus.

A hallmark of the department is the Labor/Management Partnership program that exists among fire administration and both locals of the International Association of Fire Fighters. This partnership is designed to include the employees as a participant in every significant decision within the department concerning policies and programs.

Mission

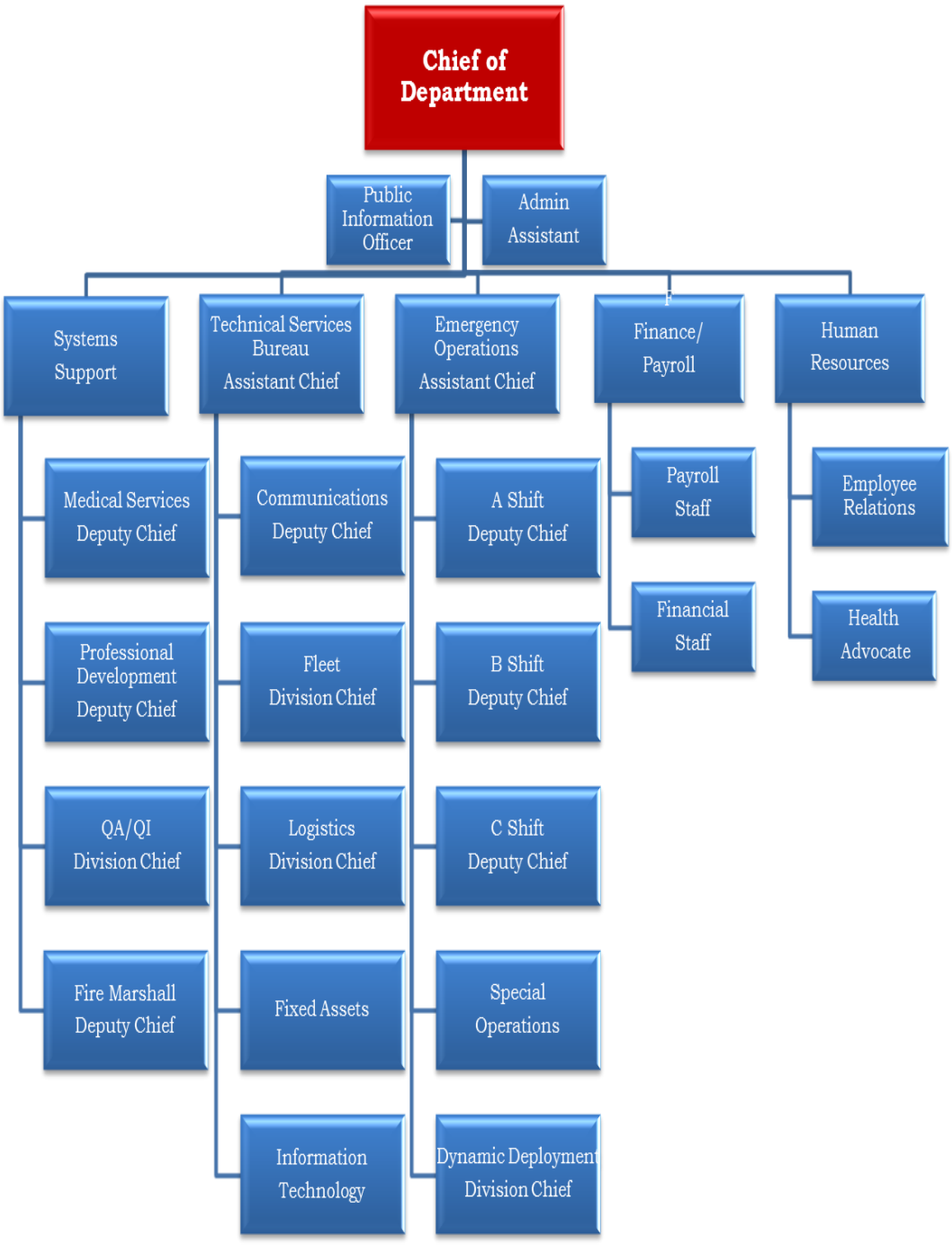
KCFD provides compassionate, professional life safety services by responding to the needs of the citizens and visitors of Kansas City, Missouri and its greater metropolitan area. Our services are enhanced through training, education, planning and teamwork. We will achieve our mission safely through the effective and efficient use of all resources.

Personnel & Equipment

The department includes more than 1200 emergency response and support personnel. The Kansas City, Missouri Fire Department has a daily deployment to serve the nearly 470,000 citizens of Kansas City, Missouri that includes:

- 34 Pumpers
  - 10 ALS Pumpers
  - 24 BLS Pumpers
- 19 Static ALS Ambulances
- Various specialized support equipment (Air support, HazMat Rescue)
- 3 Technical Rescues
- 12 Aerial Apparatus
- 27 Dynamic ALS Ambulances

KCFD Organizational Structure



Executive Summary

This Line of Duty Death (LODD) Investigative Report is dedicated to FAO Larry Leggio and FF John Mesh, and to the families, friends, and coworkers of these two brave men. These two Kansas City, Missouri firefighters will never be forgotten for their supreme sacrifice. The Kansas City, Missouri Fire Department is committed to share this investigative report with the department and the fire service so that organizational learning can occur. It is our hope and genuine desire that the findings from this report will be utilized and employed in a manner to ensure that a tragic incident such as this one never happens again.

The findings in the investigative report were derived by applying a multi-dimensional team approach. The charge for this investigation included the construction of a final report to be presented to the Fire Chief, outlining the facts of the incident, the identification of causal factors, and recommendations for appropriate corrective actions. The following bullets present the investigation objectives:

- Identify factors which resulted in the Line-of-Duty-Deaths (LODD)
- Identify situations that involve unacceptable risk
- Identify previously unknown hazards
- Identify inadequacies in training, policy or performance
- Ensure lessons learned are communicated to effectively prevent future accidents and injuries
- Identify professional standards to be used/applied in the construction of departmental policy

Alcohol, Tobacco, and Firearms (ATF); the Kansas City, Missouri Police Department's Bomb and Arson Unit; the Missouri State Fire Marshal's Office; and the Fire Investigation Division of the Kansas City, Missouri Fire Department worked collaborativly to determine the origin and cause of this fire. The joint task force conducted interviews and dissected the structure to analyze every aspect and every component of this incident. This exhaustive process encompassed 9 days of scene and witness review. The findings of this joint task force were utilized by this investigative to establish facts and compose recommendations..

On the evening of October 12, 2015 FAO Larry Leggio and FF John Mesh were fatally injured in a wall collapse at a structure fire that was dispatched at 7:27 pm. The fire involved a three story Type III structure with apartments located on the second and third floors. The first floor contained four commercial spaces, three of which were occupied and open for business on the date of this incident.

Initial regular alarm companies reported heavy smoke and commenced rescuing residents from the upper floors of the structure while attempting to determine the location and seat of the fire.

After 19 minutes, 38 seconds of interior operations, the Incident Commander ordered an evacuation and switched operational tactics from “offensive” to “defensive”.

Shortly after this change in tactics, the Incident Commander ordered that a collapse zone be established. At 8:06 pm, firefighters were operating inside a collapse zone when the D-side masonry wall collapsed. Four firefighters were transported emergency to area hospitals and two of these men passed away from their injuries. Several firefighters reported injuries resulting from the collapse, and two of these firefighters are undergoing extensive rehabilitation from injuries sustained.

Incident Summation

On October 12, 2015, at 7:27 pm, the Kansas City, Missouri Fire Department (KCFD) dispatched a regular alarm consisting of 3 pumper companies, 2 truck companies, 1 ALS transport medic unit, and a Battalion Chief. The staffing per apparatus is a minimum of 1 officer, 1 FAO, and 2 firefighters for fire suppression units and 1 EMT and 1 paramedic for the ALS transport unit.

Upon arrival at 7:29 pm, the first KCFD unit reported heavy smoke showing from the rear (North side, C-side) of the structure, established command, requested a working fire response, and then stretched a 1 ¾-inch, pre-connected hand line to begin fire attack. There was a report of civilians trapped and the first and second arriving truck companies began rescue of occupants from windows and stairways.

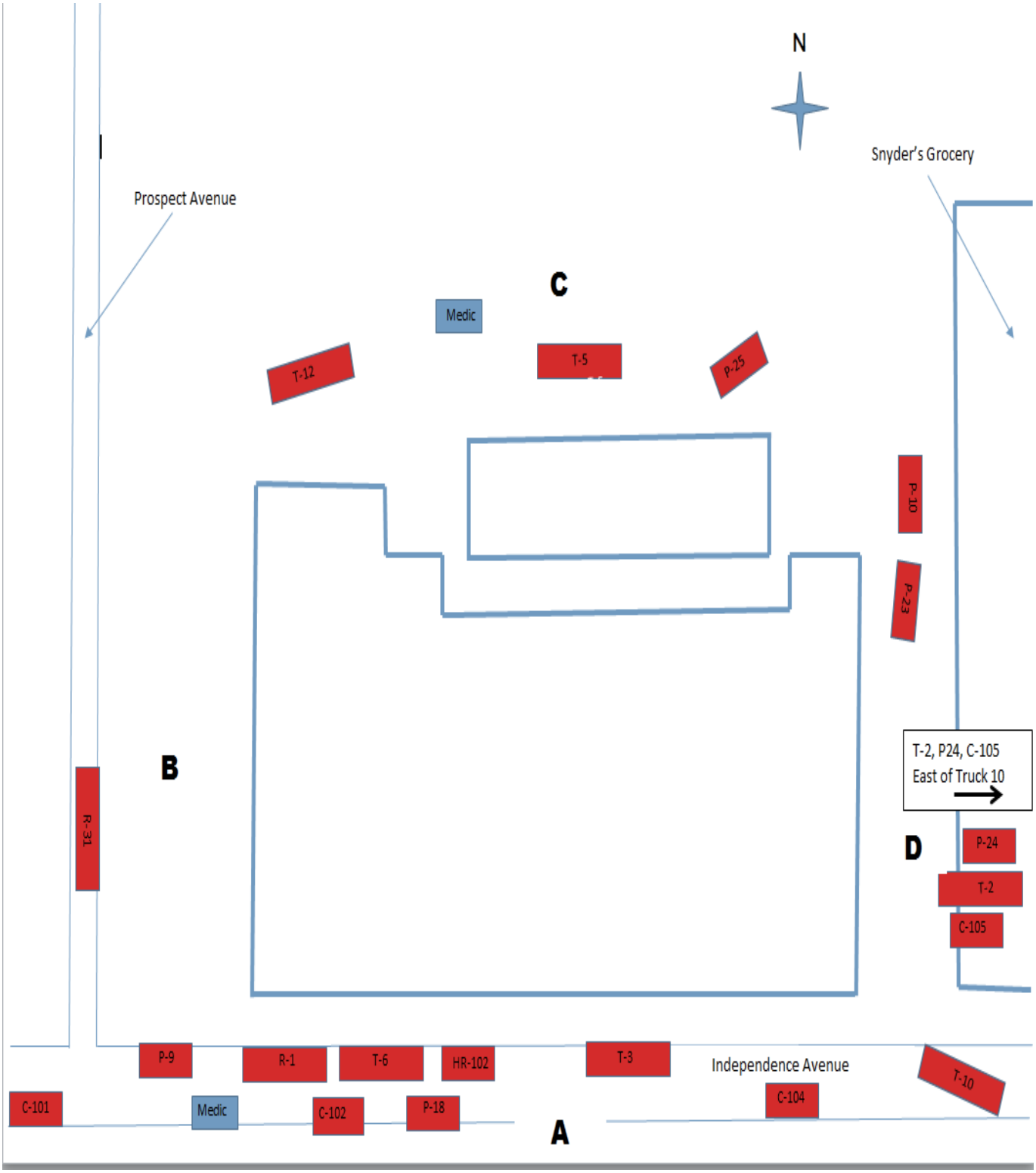
Command was assumed by the first due Battalion Chief (Incident Commander or IC), who then requested a first alarm and reported heavy smoke conditions from a large structure with mixed occupancies. The building addressed as 2608 Independence Avenue was a three story, mixed occupancy that has four commercial occupancies located on the first floor; it is of Type 3 construction. The second and third floors were wood frame, balloon construction. All of the commercial occupancies were accessible from the south side (street side).

Upon arriva,l there was little to no smoke visible and no fire showing. There was one (south side, A-side) entrance that provided access to the second floor apartments, however they were not marked as such. Located at the rear (north side) of the building was access to all three stories with easy access to the second and third floor apartments. The first floor commercial occupancies were accessible on the north (C- side) with the exception of the unit of fire origin, which only had access from the south (A-side).

Fire companies operating under extreme heat and smoke conditions were able to rescue two occupants from the structure. They then provided a primary search after the rescues and reported all-clear. Firefighters detected several locations throughout the building where fire conditions were becoming untenable, and reporting great difficulty in locating the main seat of the fire. Based on this information a second alarm was requested by the incident commander.

Approximately four minutes later, the IC ordered evacuation of the building. Dispatch confirmed the order and provided alert tones repeating the IC's request for a Personnel Accountability Report (PAR). All companies responded with reports that all personnel were accounted for. The first arriving EMS supervisor completed a face-to-face briefing with the Incident Commander and established an initial treatment sector on the A-side of the structure. A medical branch was established to address any expanding medical needs.

Scene Map


N
Prospect Avenue
Snyder's Grocery
C
Medic
T-12
T-5
P-25
P-10
P-23
B
R-31
T-2, P24, C-105
East of Truck 10
D
P-24
T-2
C-105
P-9
R-1
T-6
HR-102
T-3
Independence Avenue
T-10
C-101
Medic
C-102
P-18
C-104
A

The Fire Structure

The department's internal investigation team attended a presentation by the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) on January 29, 2016, regarding their investigation into the incident. This presentation provided valuable and detailed insight into the factors that leading to this tragic event. This fire was found to be intentionally started. It is the consensus of this investigation team that this fire was started in what was very likely the worst possible location for civilian, firefighter, and building survivability. Information supplied below regarding building construction has been compiled after reviewing various agency reports regarding this incident and past incidents involving building collapses.

The earliest city records show that this building was erected in 1925. It was a 3-story Type III, ordinary constructed building with four commercial spaces on the first floor. The measurements of this building were 64 by 216 feet on the ground floor, which equates to 41,472 total square feet. There were an additional 16 apartments located on the second and third floors. This structure did not contain a sprinkler system or a centrally monitored fire alarm system. Several of the apartments on the second and third floors contained single station smoke detectors.

<u>Commercial Spaces</u>

The first floor contained four commercial occupancies (2606 - 2618 Independence Avenue); Jackson Hewitt Tax Service, Gracie's Store, LN Salon and Spa, and an unoccupied space.

(Picture 1)

The first floor was built upon a concrete slab. The upper floors were supported by ceiling joists that ran from east to west within the building. There were four large I-beams that ran north and south that the ceiling joists rested upon. These I-beams were supported by tubular steel columns located throughout the first floor of the structure. It is important to note that the I-beams and joists were located within a concealed space which ran the span of the structure. Additionally, the tubular steel columns were exposed and unprotected on the first floor.

(Picture 2)

The Apartments

The second and third floors were balloon construction with a vertical vent shaft running the length of the structure (see location below). The shaft originated in a wall space between LN Salon and Spa and the vacant occupancy directly east of LN Salon and Spa. The main entrances into the apartments were located on the C-side of the structure through two main access points. It is important to note that there was an additional entrance to the apartments via a stairwell located on the A-side of the structure.

(Picture 3)

Building Components

The exterior walls were constructed as outlined below:

- A-side – the three story front of the structure was masonry constructed with some portions of the second and third floors containing a stucco decorative finish.
- B-side – this wall was shared on the first floor with an additional building (Speedy Loans, not part of this report). It was constructed with a clay tile and brick.
- C-side – this wall had several characteristics. Visually, this side of the structure looked like two stories due to the grade of the lot. However, this building contained a below grade walkway that opened into the rear of the commercial occupancies on the 1st floor. This wall was constructed of clay tile and brick, with the second and third floors covered with wood siding.
- D-side – this wall was constructed with clay tile and brick. There were no entrances to the building from this side of the structure. There were several apartment window openings and 3 openings to the unoccupied occupancy on the first floor.

Unreinforced masonry walls are typically several wythes thick. This can visually be determined by viewing bricks laid with the butt end on the exterior face of the wall; this ties the wythes of bricks together.

Division A

Division D

Division C

2608 Independence Avenue (Picture 4)

Roof

The roof was comprised of several dormers and roof gables that can be seen in the aerial and exterior photos of the structure. The remainder of the roof was flat with a parapet wall around the perimeter. Utility services mainly entered the structure from C-side. There was a separate structure due north of the fire building that housed the steam furnace for the structure.

Masonry Brick Wall Curtain-Fall Collapse

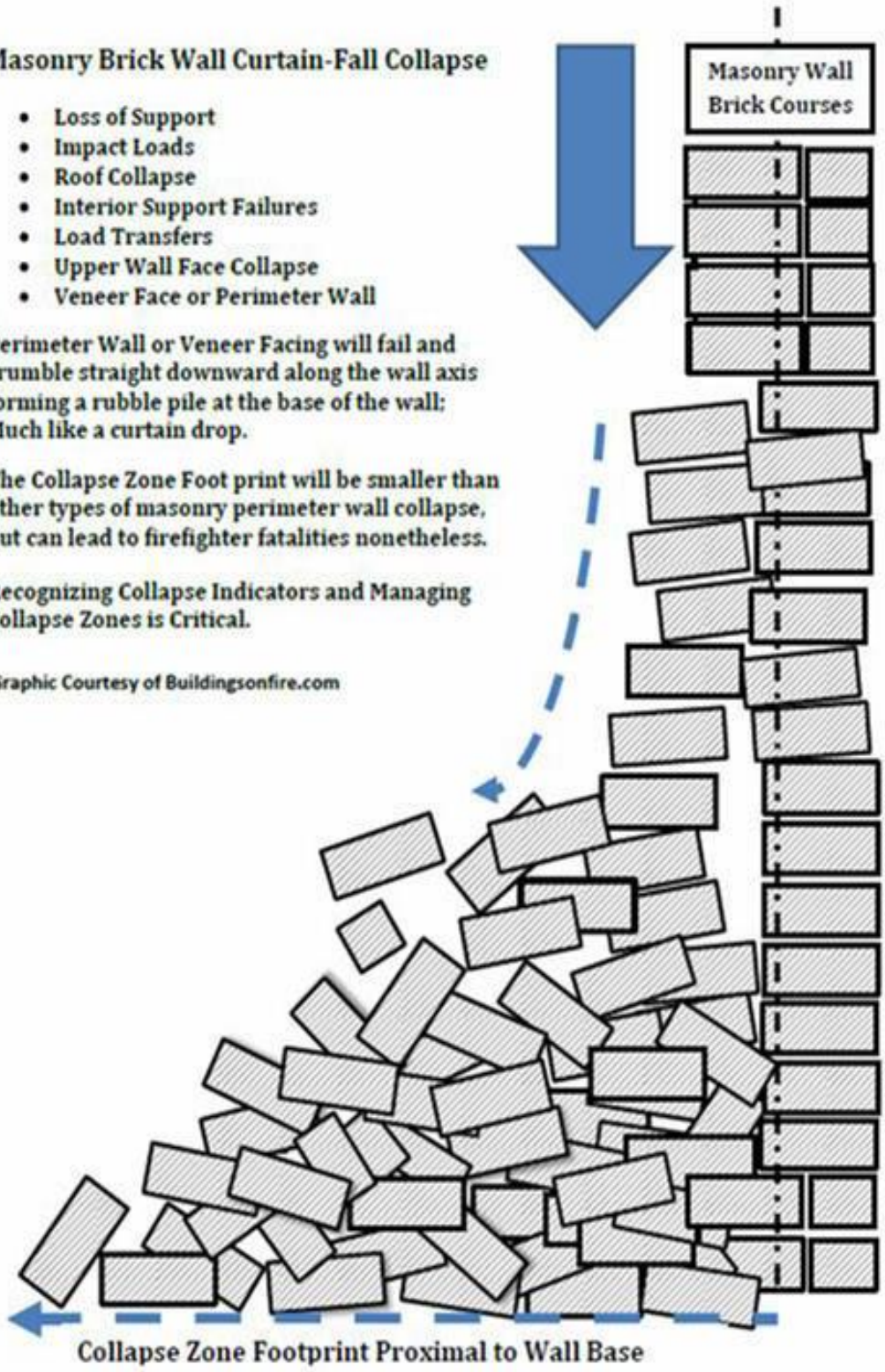
- Loss of Support
- Impact Loads
- Roof Collapse
- Interior Support Failures
- Load Transfers
- Upper Wall Face Collapse
- Veneer Face or Perimeter Wall

Perimeter Wall or Veneer Facing will fail and crumble straight downward along the wall axis forming a rubble pile at the base of the wall: Much like a curtain drop.

The Collapse Zone Foot print will be smaller than other types of masonry perimeter wall collapse, but can lead to firefighter fatalities nonetheless.

Recognizing Collapse Indicators and Managing Collapse Zones is Critical.

Graphic Courtesy of Buildingsonfire.com



Contributing Factors

The internal investigation team applied an error-based research procedure to determine the most accurate framework by which elements of this incident could be highlighted and discussed. For analyzing firefighter near-miss reports, the following criteria are utilized to determine and recognize causal factors that resulted in the Line-of-Duty-Deaths. These criteria represent a large body of research that was first developed by the Department of Defense to study and analyze aircraft accidents. This system is called the Human Factors and Classification System (HFACS). This system is utilized as a tool to assist the investigative process and highlight targeted training and prevention efforts recommended for KCFD.

Below is a comprehensive human error framework which was selected by firefighter near-miss reporting system. Below are 18 causal categories related to the four levels of human failure:

1. Unsafe Acts
    - Situational Awareness
    - Communication
    - Teamwork
    - Individual Action
    - Task Allocation
    - Human Error
2. Pre Conditions to Unsafe Acts
    - Weather
    - Fatigue
    - Accountability
3. Unsafe Supervision/IMS
    - Inadequate Supervision
    - Planned Inappropriate Operations
    - Failure to Correct Known Problems
4. Organizational Influences
    - Training issues
    - Staffing
    - GAG/GOG
    - Policy/Procedure
    - Equipment
    - Limitations

~ Unsafe Acts ~

Situational Awareness

Situational awareness is developed differently among a wide range of firefighters. Experience, education, and departmental policy are all elements that develop situational awareness. Couple these elements with knowledge previously gathered regarding the incident, as well as new information as it is received, and one begins to develop situational awareness. The overall foundation of situation awareness is determining risk versus reward and making incident appropriate tactical assignments.

The 2608 Independence Avenue incident contained several critical elements that shuld typically prompt enhanced situational awareness. A large portion of the firefighters had responded to a previous structure fire in this building about 10 months prior to this incident. This information

was utilized by the first arriving companies and the majority of resources responded to the rear or C-side of the structure; knowing that this was the primary entrance into the apartments on the second and third floors that presented the greatest life hazard. The initial size-up upon arrival indicated "heavy smoke". Several company officers stated in the after action review that they were surprised that a fire would be that advanced so early in the evening. This was a critical incident factor revealing that the fire had transitioned past the incipient stage well before the original dispatch or 911 call.

- Company officers had previously pre-planned this structure and determined in many cases it would be best to utilize the C-side of the structure for fire attack. The C-side of the structure was the main entrance for the apartments and the second and third floors. Citizens were motioning for assistance in the rear of the structure on arrival.
- Previous knowledge also assisted in the determination of C-side fire attack.
- A well involved fire was indicated by the size-up provided by the first Incident Commander. This is the type of information that should be utilized when determining time sequencing for offensive tactics.

Transfer of command was completed twice during this incident, and three distinct individuals held Incident Command at least once during this incident. There are basic tenets that must be completed before a transfer of command is to take place. The fundamental premise is that all transfers of command take place "face to face". During this incident the "face to face" transfer of command did not take place during the first transfer of command.

- In conjunction with the department's IMS manual, the first arriving officer assumed command and employed the "fire attack" mode, directing fire attack on the C- side of the structure.
- First arriving chief officer assumed command and began IC operations on the C-side of the structure.
- First arriving deputy chief conferred with IC and assumed command. He established the command post on the A-side of the structure.

Upon arrival, the ranking deputy chief began to organize resources and tactics that centered upon a large "defensive" commercial structure fire. The Incident Commander ordered that all chief officers report to the Command Post for instruction and assignments. Additionally, the Incident Commander began to divide the incident into divisions with assignments made to each side of the structure. Also upon arrival, the ranking deputy chief began to consider building collapse. The Incident Commander requested tones from the communication center and ordered that a collapse zone be established. The communication center received and repeated the Incident Commander's message with informational tones.

- The ranking officer began to establish a working Incident Action Plan that assigned chief officers to specific roles.
- The ranking officer established a collapse zone.
- Upon visual determination that firefighters were operating within the collapse zone he began to verbally order the evacuation from the D-side alley, just seconds before the wall collapsed.

Between the moments of 7:57:40 pm and 8:02:26 pm, per the radio log, aerial master stream operations from the C-side of the structure were commenced. The collapse of interior floors and D- side of the structure occurred at 8:06:11 pm. This was the only reported aerial stream in operation prior to collapse, though interior hand lines had been in operation for several minutes prior to evacuation at 7:49:19 pm. Applied water can add significant weight to a structure, though it is unknown if this was a contributing factor to the timing and location of the collapse.

Situational awareness must be conducted by all personnel operating at emergency incidents. This process searches for signs and information that can be employed when determining strategy and tactics. Items that should be communicated to all those at the scene are obvious safety concerns, building degradation or structural movement, and human injury or rescue.

Communication

The investigation into this event included a review of all audio recordings of the event, personal interviews, and information gathered from the department's formal AAR regarding this incident. The department's communication model is not consistently utilized by communications and emergency personnel. Should messages be transmitted utilizing the "You, this is me" foundational concept on all communications? The organization must identify and adhere to a prescribed communication model. Without this, communications may not be heard, may be dropped, or may be misunderstood. Emergency scenes are dangerous on their best day and a system should be adhered to that everyone understands. Missed communications can lead to disastrous results. Information gathered from the formal AAR highlights that a number of the companies operating on the scene did not hear the "Collapse Zone Order" issued from command.

Teamwork

Within the fire service profession there are countless standards, polices, textbooks, and articles that stipulate that tasks performed on the fire ground be conducted in a minimum of a two person team. The investigation team did not find any instances of personnel operating outside the scope of this professional standard except for the district safety officers who were operating within cultural norms.

Individual Action

The investigative team recovered documents that included interviews of the firefighters on the scene, reviewed information gathered from the formal After Action Review, and analyzed audio recordings to reach their determination under this category. It was found that no select individual action was a determining factor in the masonry wall collapse.

An element of company action was discovered in the course of this investigation that warrants mention. There were instances in which KCFD companies self-dispatched to the fire scene. Self-dispatching has the potential to derail the process of accountability and order that the Incident Commander and Communications staff so desperately need while mitigating chaotic emergency scenes. At this scene, there is no negative impact from these actions, but at any incident (where a May-Day could occur) the extra burden of that disorder could lead to tragic results.

During this incident and immediately following the wall collapse staging companies self-reported and self-assigned tasks. When serious events transpire at any emergency scene, resource tracking becomes paramount. When the collapse of staging occurs, inadequate resource tracking is the inevitable result.

Task Allocation

Throughout this incident there were a multitude of tactical assignments that were issued and completed. On almost every fire scene it is common for resources to be split to perform tasks such as two truck firefighters assigned interior to the structure to perform a search and two truck firefighters assigned to the roof to ventilate. This happens routinely on all emergency incidents and is a normal procedure.

The tactical decision to place resources within the collapse zone was communicated over the radio by the division chief officer after his conversation with a fire apparatus operator that was located on the D-side of the structure. This message was not confirmed by the Incident Commander. The task consisted of stretching and directing a hose line from the corner of the D-side of the structure and to place a water stream into two openings that were showing aggressive fire. It was reported from the crews on the D-side of the structure that fire was impinging upon a fire apparatus that was spotted in the alley. The resources assigned to complete the tasks by the division chief officer were sufficient to complete the task.

Human Error

There is a significant cultural error that takes place on large incidents. Once the overall incident objectives have been switched to defensive from offensive, several critical things occur. Firefighters exit the involved structure and conduct Personal Accountability Reports (PAR). Once the all-clear has been broadcast by the communications center, a certain level of scene

safety is diminished. Firefighters gather close to their apparatus and begin to remove their SCBA's and prepare for defensive operations. Medical indicators such as blood pressure and pulse rate all start to decrease at this stage in the incident. Unfortunately, at this point the firefighters began to feel that their personal safety had drastically increased from the time they were inside the structure. Almost always this instance is true; it is safer outside of a burning structure than being on the inside.

The increased sense of safety on the exterior of the structure was a factor at this incident. This flawed safety sense allowed for the tactical decision to perform and maintain operations within the alley on D-side of the structure. The alley on the D-side of the structure was utilized as a primary avenue of travel for those personnel at the incident until the collapse of the wall. There was one fire apparatus parked within the collapse zone on the D-side. Immediately following the command staff meeting at the command post on the A-side of the structure, 3 officers utilized the alley to reach the location of their assignments. Ultimately, the D-side of the structure was not critically evaluated as an immediate danger to firefighters in the area and proper consideration of wall collapse was not recognized by most firefighters at the scene.

~ Preconditions to Unsafe Acts ~

Weather-Fatigue

Weather cannot be considered a contributing factor for these investigations, after reviewing the information provided from the National Weather Service (NWS), it outwardly does not seem to have an effect on this incident. Weather conditions recorded that night at 7:30 pm were in the middle to upper 60's with the winds steady out of the west at less than 5 mph. At 8pm the NWS reported a slight drop in temperature to the middle lower 60's with a further drop in wind speeds to 0 with no direction registered.

In this instance, fatigue does not appear to be a contributing factor for the events and decisions made at the fire on Independence Avenue. A run report generated for the first in companies indicates there is no concern on the issue of crew fatigue. A TeleStaff report generated to determine the working hours of the members suggested no critical role in the incident. Nothing unusual was determined from the information provided for most of the key members involved. One member was from a different shift and was trading time the day of the incident. This member had worked an overtime shift in addition to his regularly assigned shift in the days preceding the fire. KCFD Communications Center generated a report indicating the run volume for the first in due companies who played a major role in the fire attack.:

- Pumper 10 responded to 12 calls including the fire on Independence Ave.
- Truck 3 from the same fire station responded to 4 calls including Independence Ave fire.
- Truck 2 from St. 17 responded to 3 calls including the fire.
- P23 responded to 7 calls, including the fire.
- Truck 10 responded to 3 calls, including the fire.

- Car 104 responded to 3 calls, including the fire.

Accountability

Currently, KCFD does not utilize its existing policy that addresses accountability. On the night of the incident there was not an accountability system in place. NFPA 1521, *Standard on Fire Department Safety Officer Professional Qualifications* and NFPA 1561, *Standard on Emergency Services Incident Management System and Command Safety*, address the need for such a system to be utilized by the fire departments for both emergencies as well as for non-emergency operations.

~ Unsafe Supervision/IMS ~

Inadequate supervision

Were adequate resources ordered for this event and how did this impact span of control? The second incident commander requested that the Communication Center not order but prepare for a second alarm. During large scale events that require extra alarms, it is important that incident commanders consider Level I and Level II staging of extra alarm companies so that systematic placement of resources can occur. When the 2nd alarm was requested at this incident, a staging location was not communicated. For the first 20 minutes of this incident 2 chief officers were responsible for 14 companies. The Medical Branch consisted of 2 EMS supervisors and 4 ALS transport units. Additional truck companies were ordered by the second incident commander. Per the KCFD IMS manual, span of control is identified as between 3-7 companies for each supervisory role. As identified in a previous section of this analysis, self-dispatching disrupts span of control and causes confusion. It is imperative for all officers to account for resource demands early within an incident.

Immediately following the wall collapse, a May-Day was issued by the C-side commander. This was acknowledged by the incident commander and the Communications Center began May-Day communication protocols along with an extra alarm level that is part of the operational May-Day GOG.

All fire ground operations on tactical channel 5 were assigned to the new tactical channel 6 by the communications center. This procedure insures that firefighters in trouble do not compete for air time with companies operating on the fire ground. On-scene personnel and the incident commander did not make the move to the designated fire ground tactical channel 6. The extra alarm May-Day companies responded to the scene on tactical channel 6 and did not have communication with the incident commander as he remained on tactical channel 5. The failure to switch tactical channels caused confusion with the extra alarm May-Day companies and the medical branch officers. All companies remained on tactical channel 5 for rescue operations. The Communications Center quickly realized the confusion regarding tactical channels and switched additional resources to tactical channel 5 for assignments.

The potential for communication issues during a May-Day is increased by moving fire ground operations to a new tactical channel as prescribed by the May-Day GOG. The switching of May-Day event is discussed in the recommendations.

Planned Inappropriate Operations

The tactical assignment that generated tragic results was placing resources on the D-side of the structure within the designated collapse zone. This tactical assignment was critical due to fire impinging upon a fire apparatus parked in the alley. After given his assignment by the incident commander the division officer in charge of the D-side was confronted by a member expressing the need to secure a water source for one of the apparatus on the D-side. At that time the chief saw no one inside the collapse zone and no fire impinging on the apparatus; he then left the D-side to search for a water source. Between this moment and the return of the division officer a company officer saw fire impinging on the fire apparatus parked in the alley. It was during that time that this company officer ordered his crew to direct their hose stream into the windows showing fire. The hose was placed in the position of maximum effectiveness, which placed the crew within the collapse zone. This action should be noted as an effort only to protect the fire apparatus and was to be a temporary placement. The building showed no signs of imminent collapse, which factored into this decision by a number of experienced personnel. Within seconds of the return of the division officer a sudden, catastrophic collapse occurred.

- *Why was the apparatus in the alley?* Personnel were attempting to protect an apparatus in the alley that had been blocked from movement earlier by a utility vehicle
- *Had a strict collapse zone been adhered to prior to the hose line placement?* No. A number of individuals, including chief officers, had travelled to various areas on the fire ground via the alley.
- *Why were personnel allowed to operate on the D-side?* There were many places on the D-side which afforded a safe vantage point to protect exposures and extinguish the fire. Personnel on the D-side operated safely outside the collapse zone until minutes before the collapse when the fire began impinging upon the apparatus.

Failure to Correct A Known Problem

The investigative team identified failures to correct a known problem that occurred during the incident.

- The most significant was personnel operating in the alley. Once this was identified, the incident commander immediately began radio traffic to remove personnel from the alley. Before the communication could be completed, the wall collapsed on the personnel.
- The alley was utilized as the main path of travel to reach the C-side of the structure by the majority of personnel on the scene. Officers leaving the command staff meeting, in which the collapse zone order was issued, utilized the alley to reach their assignments.

This dovetails with the earlier discussion regarding the lack of understanding and implementation of collapse zones.

- Several fire apparatuses were positioned within the collapse zone. There was consideration given to moving the fire apparatus in the alley once defensive tactics were being prepared.

The other identified failures to correct did not have a significant impact on this incident but require work by the department to correct going forward.

~ Organizational Influences ~

Training Issues

Training is defined as the effort to increase the knowledge, skills, and abilities (KSAs) of employees and managers so that they can better do their jobs. The investigative team has highlighted several areas within the auspice of departmental training that are causal factors. The department relies predominantly on company level training on a daily basis and rarely performs multi-company training or annual training in areas such as situational awareness, resource management, building construction, tactics, and the IMS system

The training records for FAO Leggio and FF Mesh were accounted for from the Fire Training Academy and the EMS Training Division. Both employee records reflect certifications from either the Division of Missouri Safety for Firefighter 1&2 or the equivalent from the authority having jurisdiction (AHJ). Numerous other State of Missouri certifications were noted in their training files. The knowledge employed by both of these firefighters is hard to measure. Both of these firefighters worked in high call volume areas and were assigned to busy fire companies.

Staffing

The investigative team has concluded that staffing did not present any causal factors at this incident in accordance with NFPA 1710. Proper staffing levels result in increased experience and enhanced safety on emergency incidents.

GAG/GOG/Policy

An overall evaluation to identify existing policy that may have affected this incident was performed. The following policies were examined for purpose, ability to execute, if it contributed negatively or was not followed, and for need of revision.

- FF Safety Manual
- KCFD Rules and Regulations
- GAG 5-1 In-Service Training
- GAG 5-12 Regular Core Competency Training
- GOG 11-2 May Day Communications
- GOG 11-9 KCFD Accountability

- GOG 11-9.1 Personnel Accountability Report (PAR) Procedures

Policy specific evaluations are detailed in Appendix C.

NOTE: GOG 10-1 KCFD IMS and GAG 3-4 Radio Communication Procedure were also identified as relevant policies, but evaluated in separate sections.

Culture

Organizational culture is found throughout all spheres of society and the Kansas City, Missouri Fire Department has a distinct culture of its own. Several of these cultural norms are addressed in this sub-section of the analysis.

- *We are a tactically aggressive fire department that is proud of its tactical approach to fires.* Our aggressive nature often yields life-saving results and saves our citizen's property. Such was the case at this fire. KCFD firefighters rescued two citizens from upper balconies on the north side of the structure during this fire fight. This aggressive nature, however, needs to be re-calibrated to always include risk versus reward determinants. It was noted by interior fire attack crews that some of our members were nearly at May-Day conditions while still in the structure due to heat, many felt interior operations had become untenable, and some were following hose-lines to escape the structure when the evacuation orders were given. This was too close to further tragedy.

- *Our mangers, at times, do not manage their personnel.* KCFD supervisors at every level of an emergency scene need to direct their personnel in conjunction with the overall objectives and strategy. We cannot let tactics drive the decision making process. It is perceived that suppression tactics in the alley on the D-side may have driven decision making, as opposed to objectives and strategy driving the decisions. When there is little to save, we should risk very little.

Cultural norms are not of necessity detrimental to safety. Some norms provide this department strength. But the cultural norms that work against the safety of firefighters are and can potentially be disastrous and should not be tolerated.

Equipment

It is departmental policy that, whenever entering any type of structure, every person carry their assigned portable radio. After reviewing the interviews of those firefighters at the scene, it was determined that not all radio transmissions were heard during this incident. It should also be noted that numerous members working on the C and D side at the time of the collapse reported that they had their radio donned but failed to hear the notification of the collapse zone or emergency tones. The current radio system has had technical issues that have required adjustments and a Labor/Management Project Team was formed in 2013 to identify and fix

problems with the system. The result of this examination was the Labor/Management decision to utilize a trunked radio system for tactical fire ground communications. While not a contributing factor in the collapse, communication challenges increase the complexity of the response and rescue effort.

No other PPE was found to be an issue at this incident.

Limitations

Whenever any public safety organization loses one or more of their valiant servants, the impact is destructive. The tragic results of this incident impacted the organization equally as a whole. All of the stages of the grief process hold true for organizations as well. In January, 2016 the Fire Chief assigned the task to investigate this incident to the team listed in this report. The report was compiled in 12 weeks.

Information from previous interviews, interviews conducted by the investigation team, recordings, and results from the formal AAR were utilized in the formation of the material presented

Recommendations

Recommendation #1

The department should develop a Collapse Zone policy. Currently, the fire department does not have a specific policy addressing Collapse Zones. This policy should be developed utilizing NFPA, NIOSH, IFSTA and other industry recognized standards and recommendations as reference. This policy should include the visual identification of establishing Collapse Zones such as by lighted beacons or colored incident scene tape.

Recommendation #2

The department should update current communication policies as they apply to emergency incidents. Currently, the department does not employ a uniform applied to radio communications. The policies addressing critical information exchange should be updated. The investigative team also identified the need to establish departmental procedures regarding confirmation of critical emergency incident communications. Much in the same manner as we conduct PAR procedures, these confirmation steps should be employed for every major benchmark within an incident. The investigation team has concluded that GAG 3-4, *Radio Communications,* should contain updated information regarding radio call procedures.

Recommendation #3

The department should develop an inclusive training program that revolves around the merits of Situational Awareness. The Incident Commander is specifically responsible for managing risk at the incident, however, one person cannot be expected to apply these principles to an incident if the organization has not integrated a standard approach to risk management into its policies and its organizational culture. Firefighters and fire officers should be trained and a system should be implemented to outline clear rules of engagement and initial scene size-up. The risk versus reward methodology should be employed.. This recommendation coincides with Goal 5 of the department's strategic plan (2014): *Provide comprehensive training and professional development to ensure personnel are fully prepared to effectively perform their duties and responsibilities.*

Recommendation #4

The department's current Incident Management System Manual needs to be updated to include current practices and new standards. The following bullets identify the elements of this policy that should be included or updated.

- When, where, and how IMS should be employed.
- Clear instruction on how emergency incidents should be organized at the tactical level.

- The IC should have a dedicated Safety Officer on all incidents.
- The IC should develop a survivability profile when determining offensive or defensive operations.
- The initial size-up should consider the type and condition of structure to determine possible structural weakness.
- The creation of major incident benchmarks and the announcement and verification of these benchmarks (such as the department's current PAR procedures).
- The establishment and verbal announcement by the Communications Center as it pertains to the construction of a 20-minute clock that is communicated to the Incident Commander.

The review and changes to the departments IMS manual should refer to: NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*; NFPA 1561, *Standard on Emergency Services Incident Management System*; and the National Incident Management System.

Recommendation #5

Train all department officers regarding Safety Officer duties and responsibilities. One critical characteristics of the Safety Officer function is t that this incident function is not task oriented. The responsibility of this IMS function is overall scene safety. This recommendation coincides with Objective 3K of the department's strategic plan (2014): *Define the role and function of the Safety Officers.*

Recommendation #6

Train all emergency personnel in building construction. Building construction has drastically changed of the last two decades. It is imperative that this organization recognize critical structural weaknesses and signs of collapse. The knowledge gained through this department training should be incorporated into all scene size-ups given by the first arriving officer. This recommendation coincides with Goal 5 of the department's strategic plan (2014): *Provide comprehensive training and professional development to ensure personnel are fully prepared to effectively perform their duties and responsibilities.*

Recommendation #7

Ensure that all personnel properly wear all assigned Personal Protective Equipment when required by policy. The organizational culture that allows for varying interpretations regarding when and where PPE should be donned must be terminated. This recommendation coincides with Objective 3G of the department's strategic plan (2014): *Develop an organizational strategy to promote consistent use of personal protective equipment (PPE) to reduce potential for injury.*

Recommendation #8

Develop, train and employ an Incident Accountability System for use in all emergency incidents. The department currently has a general operating guidline establishing a departmental accountability system (GOG 11-9). The details of this policy deal with the administration of an accountability system at emergency and non-emergency scenes. Impractical, outdated, and inefficient for emergency scene use, the policy has lacked consistent utilization from its first implementation. This recommendation coincides with Goal 7 of the department's strategic plan (2014): *Develop an updated KCFD incident management accountability system*

Recommendation #9

The fire department should consider preparing, training, and implementing new policies and procedures in a different format. Currently the department has over 200 policies, directives, GAGs and GOGs. In order to update and reorganize our current system, we must identify operational polices that should not be deviated from. Calling our operational procedures "General Operating Guidelines" (GOGs) versus Standard Operating Procedures (SOPs) may imply that there is flexibility in complying with any given policy. There is no legal difference between GOG vs SOP. All policies and procedures must comply with state and federal regulations such as OSHA, NFPA, and the Code of Federal Regulations and should be cross-referenced to these standards. A procedure for an annual review of all policies and procedures should be implemented.

Recommendation #10

The department should develop a policy that addresses the formation of an investigation team concept to be employed in any serious injury incidents. The following resources are recommended for utilization and construction of this policy: LODD or Injury Investigation guides published by IAFF/IAFC; NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program* and NFPA 1521, *Standard on Safety Officer Professional Qualifications*. By preparing in advance, the department will ensure that we are able to handle at least some of the myriad items that must be dealt with after a serious incident such as the Independence Avenue fire. Other organizations have developed Health and Safety Units that hold the responsibilities mentioned in this recommendation.

Recommendation #11

The Department should develop and implement a behavioral health training, referral and educational program that also addresses peer counseling, suicide prevention and intervention. Not all firefighters will need this service or take advantage of it. The construction of this team is crucial to ensuring the emotional health and recuperation of department members. Although not a contributing factor to the collapse, the department experienced many challenges that were a direct result from this incident. The construction of this program is crucial to ensuring the

behavioral and emotional health and recuperation of the members of the Kansas City, Missouri Fire Department. Recommended resources include the IAFF/IAFC Wellness Fitness Initiative, and NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program.*

Recommendation #12

The Department should review the current May-Day GOG and update to include new communication considerations. The investigation team identified a possible element of confusion within the application of procedures outlined in the policy. After many years of successful implementation, this policy has provided a foundation for signaling of firefighters in distress. The review of this policy is recommended that also includes a regional perspective.

Recommendation #13

The Department should further develop leadership and foster management capabilities as part of an Officer Development program. This should include elements of supervision at both emergency incidents and non-emergency situations. Achieving this recommendation will position the department to be better prepared in the area of succession planning. The following resources are recommended for building the framework for this program: the IAFC *Officer Development Handbook*; NFPA 1021, *Standard for Fire Officer Professional Qualifications,* and NFPA 1026, *Incident Management Personnel Professional Qualifications*; and the Kansas City, Missouri Human Resources Academy coursework.

Recommendation #14

The Department should enhance its current building data collection methods utilized by emergency operations and integrate high hazard risk identification with Fire Prevention records. Pre-fire tactical preplanning should be considered in all areas of the city. Inspection records should be interchangeable between divisions within the department. Identification and visiting target hazards that have multiple violations will give primary response companies knowledge that may impact interior firefighting tactics and strategy. This policy should be developed utilizing the standards presented in NFPA 1620, *Standard on Pre-Incident Planning,* as a reference.

Closing

It is hard for the written word to capture the true event which transpired that horrible evening in October, 2015. It is the hope of this Investigation Team that this report will be utilized as a beginning step in a process that ensures that this type of tragedy does not repeat itself. Utilizing the resources within this document will assist the organizations learning process as we move our understanding of emergencies even further.

No one factor led to the wall collapse that ultimately took the lives of FAO Leggio and Firefighter Mesh. However, it is comprehended departmentally that the enhanced knowledge of fire behavior as well as the development of situational awareness skills will provide improved organizational understanding of risk.

The Kansas City Missouri Fire Department performs hundreds of emergency scene operations every single day with skill and precision. Let it be recognized that on the night of October 12, 2015, at 2608 Independence Avenue, hundreds of tasks and operations were performed honorably, correctly, and without flaw, both before the collapse and after. In this recognition, let us also have the humility and resolve to evaluate ourselves fairly. We owe it to each other. We owe it to John and Larry. This investigation is an attempt to fulfill this obligation.

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Glossary of Terms

AAR: is a structured review or de-brief process for analyzing what happened, why it happened, and how it can be done better by the participants and those responsible for the project or event. After-action reviews in the formal sense were originally developed by the U.S. Army although less structured de-briefs after events have existed since time immemorial.

Advanced Life Support (ALS): A level of care provided by pre-hospital emergency medical services. Advanced life support consists of invasive life-saving procedures including the placement of advanced airway adjuncts, intravenous infusions, manual defibrillation, electrocardiogram interpretation, and much more.

ALS Pumper: The KCFD suppression apparatus that is primarily responsible for providing advanced medical care at any emergency medical incident. This apparatus is staffed full time with a licensed paramedic and works closely with the EMS crews on the ambulances in providing advanced medical care. The staffing reflects the staffing of a pumper.

ATF: Alcohol Tobacco and Firearms; the abbreviated acronym for the federal agency organized under the Department of Justice.

Basic Life Support (BLS): A level of medical care provided by pre-hospital emergency medical services. Basic life support consists of essential, non-invasive life-saving procedures including CPR, bleeding control, splinting broken bones, artificial ventilation, and basic airway management.

Battalion: The formal designation used by KCFD to divide Kansas City Missouri into geographical areas or primary responsibility. KCFD currently operates 7 battalions.

BLS Pumper: The KCFD suppression apparatus that is primarily responsible for providing immediate basic life support for patients at emergency medical scenes until a crew with a higher level of medical training can arrive and provide ALS care at an emergency medical scene. The staffing reflects the staffing of a pumper.

Bureaus: The formal designation used by KCFD to designate specialized areas of responsibility within the department. KCFD currently operates with 8 bureaus.

Car: The informal designation used by KCFD to designate the Battalion Chiefs vehicle.

Centrally Monitored Fire Alarm Systems: a company that provides services to monitor burglar, fire and residential alarm systems.

Command Board: A visual aid used by the fire service to provide incident commanders a better awareness of the objectives at an emergency scene.

Communications Center (Dispatch): Dispatch personnel are responsible for the operations of the Communications Center in accordance with applicable protocol. Dispatch receives requests for all Fire Department services; dispatches the appropriate unit, and coordinates the system to assure readiness. Provides appropriate pre-arrival instructions to callers, and field personnel, and continuously monitor and apply system operations that maintain coverage and efficiency of the Fire System.

Community Risk Management: the identification and prioritization of risks, followed by the coordinated application of resources to minimize the probability of occurrence and/or the impact of unfortunate events.

Company Officer: The designation used by KCFD to describe the Captains position in the organization. Both terms can be used interchangeably.

Daily Deployment: The staffing levels of KCFD equipment and personnel as provided to the city on a daily basis.

Department of Defense: is an executive branch department of the federal government of the United States charged with coordinating and supervising all agencies and functions of the government concerned directly with national security and the United States Armed Forces.

Defensive: Fire attack tactic used by KCFD by which KCFD crews extinguish a structure fire from the exterior of the building. Such tactic is used when the Incident Commander determines there is too great of a risk to perform an aggressive interior attack or search and rescue operations.

Division Group Supervisor: The Supervisor is responsible for the implementation of the assigned portion of the Incident Action Plan (IAP), assignment of resources within the Division/Group, and reporting on the progress of control operations and status of resources within the Division/Group.

Dynamic ALS Shift: The KCFD medical apparatus that works on a 10 hour rotating shift consisting of a paramedic and EMT.

Emergency Medical Services (EMS): type of emergency service dedicated to providing out-of-hospital acute medical care and/or transport to definitive care, to patients with illnesses and injuries which the patient, or the medical practitioner, believes constitute a medical emergency. The use of the term emergency medical services may solely refer to the re-hospital element of the care or be part of an integrated system of care, including the main care provider, such as a hospital.

Emergency Medical Technician (EMT): EMT personnel are responsible for patient care at the BLS level according to patient care modalities in accordance with all applicable federal, state and local laws, regulations, statutes and protocols. All EMT personnel shall comply with and perform patient care based strictly upon the policies set forth by the Emergency Physicians Advisory Board (EPAB) and the Medical Director.

FAO: The designation used by KCFD for the member who's primary daily responsibility is to operate the suppression apparatus.

Firefighter: The designation used by KCFD for the member who's primary responsibility is to support suppression and EMS operations while being supervised by a company officer.

Firefighter Fatigue: as described in the IAFF report *Contributing Factors to Firefighter LODD injury in Metro size Fire Departments in the United States*, "weariness caused by exertion. It can describe a range of afflictions, varying from a general state of lethargy to a specific work-induced burning sensation within one's muscles. It can be both physical and mental. Physical fatigue is the inability to continue functioning at the level of one's normal abilities," (Hawley, 7:97).

Firefighter Near Miss Reporting System: The National Firefighter Near Miss Reporting System was launched August 2005 at Fire Rescue International.

Fire ground transmission: Radio communications on the fire ground.

Fire Suppression: The physical acts of extinguishing the fire.

Functional Command: A command organization based on fire department functions rather than geographic areas.

GAG: (General Administrative Guideline)

GOG: (General Operating Guideline)

HazMat: KCFD division with the primary responsibility of operating and mitigating operations involving both known and unknown chemical hazards on emergency scenes.

HFACS: (The Human Factors Analysis and Classification System) developed by Dr. Scott Shappell and Dr. Doug Wiegmann. It is a broad human error framework that was originally used by the US Air Force to investigate and analyze human factors aspects of aviation. The HFACS framework provides a tool to assist in the investigation process and target training and prevention efforts.

IMS: a standardized approach to incident management developed by the Department of Homeland Security. Also known as NIMS-National Incident Management System.

IMS Form: Documents used to plan and track events and resources at an incident.

Incident Command: a standardized approach to the command, control, and coordination of emergency response providing a common hierarchy within which responders from multiple agencies can be effective.

Incident Safety Officer: is a member of the "Command Team". This person works directly under and with the incident commander (IC) to help manage the risks that our members take at emergencies.

Incipient stage: 29 CFR 1910.155(c)(26) defines "incipient stage fire" as a fire which is in the initial or beginning stage and which can controlled or extinguished by portable fire extinguishers, class II standpipe or small hose systems without the need for protective clothing or breathing apparatus.

KSA's: an acronym that stands for Knowledge, Skills, and Abilities. A detailed list of the qualifications, i.e., the Knowledge, Skills, and Abilities, that a person needs to perform a specific job.

May Day: An emergency radio message used by a lost, trapped, or injured firefighter, or any other KCFD personnel reporting the knowledge of a lost, trapped, or injured member of KCFD. Reference KCFD GOG 11-2.

National Institute for Occupational Safety and Health (NIOSH): The National Institute for Occupational Safety and Health (NIOSH) is the federal agency responsible for conducting research and making recommendations for the prevention of work-related injury and illness. NIOSH conducts independent investigations of firefighter line of duty deaths.

NFPA 1500: National Fire Protection Association Standard on Fire Department Occupational Safety and Health Program.

NFPA 1561: National Fire Protection Association Standard on Emergency Services Incident Management System

NIMS: a systematic, proactive approach to guide departments and agencies at all levels of government, nongovernmental organizations, and the private sector to work together seamlessly and manage incidents involving all threats and hazards—regardless of cause, size, location, or complexity—in order to reduce loss of life, property and harm to the environment.

PAR: Personal Accountability Report is a communication, either by radio or face to face, between on-scene personnel and the Incident Commander or their designee. A roll call (PAR) of on-scene personnel shall be completed immediately upon orders of the Incident Commander or other officer operating within the command structure fire.

Paramedic (MEDIC): Pre-hospital personnel responsible for all patient care (ALS as well as BLS) according to patient care modalities in accordance with all applicable federal, state and local laws, regulations, statutes and protocols. All Paramedic personnel shall comply with and perform patient care based strictly upon the policies set forth by the Emergency Physicians Advisory Board (EPAB) and the Medical Director

Pumper: The KCFD suppression apparatus that is primarily responsible for attacking and extinguishing a fire. KCFD pumpers supply water to other pumpers engaged in fire attack. They supply water to fire protection systems and standpipes as well as supplying water to master stream appliances like those found on truck companies. KCFD staffs all pumpers with 4 personnel that consist of a Captain, a Fire Apparatus Operator (FAO) and two firefighters

Radio Traffic: Verbal communications broadcast over the KCFD radio system.

Rapid Intervention Team (RIT): a team of four firefighters dedicated solely to the search and rescue of other firefighters in distress.

Rescue Vehicle: See Technical Rescue

Run Report: the prepared account of a particular event, happening, or incident. The term run report is synonymous with and used interchangeably with the term incident report. Utilizing the National Fire Incident Reporting System (NFIRS) standard, the run report is the method by which fire departments uniformly report to the U.S. Fire Administration (USFA) on the full range of their activities, from fire to Emergency Medical Services (EMS) to equipment involved in the response.

SCBA: Self-Contained Breathing Apparatus

Sectors: Branch—A supervisory level above division, group, or sector, designed to provide span of control at a high level. A branch is usually applied to the operations or logistics sections and is usually identified by a Roman numeral or functional name.

Static ALS Ambulance: The KCFD medical apparatus that works on a 24 hour rotating shift consisting of a paramedic and EMT that primarily operates out of one of the KCFD fire station.

Strategic Plan: an organizational management activity that is used to set priorities, focus energy and resources, strengthen operations, ensure that employees and other stakeholders are working toward common goals, establish agreement around intended outcomes/results, and assess and adjust the organization's direction in response to a changing environment.

Technical Rescue: The KCFD suppression apparatus that is primarily responsible for Forcible entry, ventilation, utility control, salvage, and overhaul at the fire scene. KCFD operates the heavy rescue version of the rescue company. The responsibilities of the heavy rescue include all of the technical rescue activities that involve swift water, high angle, trench, and other highly

specialized technical disciplines for KCFD. KCFD operates the rescues with a Captain, a fire apparatus operator (FAO) and 4 firefighters per apparatus.

Telestaff: the software solution KCFD uses for scheduling, communications, and deployment of public safety personnel and other critical resources.

Truck: The KCFD suppression apparatus responsible for Rescue, Ventilation, Laddering, Forcible entry, Checking fire extension, Ladder-pipe operation, Utility control, Salvage and Overhaul. For KCFD this apparatus carries 4 personnel consisting of a Captain in the right front seat, a fire apparatus operator who drives and operates the apparatus and two firefighters who sit directly behind both front occupants.

Tones: Non-verbal notifications broadcast across the KCFD dispatch system.

Type III Ordinary Construction Building: a building featuring exterior masonry walls and combustible interior beams or truss.

United States Fire Administration (USFA): organized in 1974 in response to the 1973 National Commission on Fire Prevention and Control report America Burning.

Working Incident Action Plan: formally documents incident goals (known as control objectives in NIMS), operational period objectives, and the response strategy defined by incident command during response planning. It contains general tactics to achieve goals and objectives within the overall strategy, while providing important information on event and response parameters.

Wythes: a continuous vertical section of masonry one unit in thickness. A wythe may be independent of, or interlocked with, the adjoining wythe(s). A single wythe of brick that is not structural in nature is referred to as a veneer.

Appendix A

Incident Timeline

2608 Independence Avenue Radio Traffic
KCFD Functional Command Communication **RED ink**
KCFD Company Communication in **Blue ink**
KCFD Communications Center in **Black ink**
KCFD After Action Review (AAR) Data **Purple Ink**

7:27:31 hours ➢ Car 104, Pumper 10, Pumper 25, Rescue 1, Truck 3, Pumper 23, Medic 5 on an apartment fire on A5

7:28:07 ➢7:28:29 hours (responding communication's lasted approximately 22 seconds)

- ➢ Pumper 10 responding
- ➢ Pumper 25 responding
- ➢ Rescue 1 responding
- ➢ Truck 3 responding
- ➢ Station 23 responding
- ➢ Car 104 responding

7:28:46 ➢ (Car 104): Dispatch give me that address again

7:28:48 ➢ (Dispatch): Car 104 and companies responding to 2608 Independence Boulevard supposed to be an apartment building, three floors, 2608 Independence Boulevard

7:29:23 ➢ (Pumper10): Dispatch Pumper 10 on the scene we got smoke showing from a three story brick apartment complex make this Independence Avenue command

- Heavy smoke conditions indicated by several first in companies.
- Heaviest conditions from C-side specifically C/D corner
- C-side smoke presenting from all 3 floors
- Little to no smoke presenting from A,B,& D sides

7:29:32 ➢ (Dispatch): Pumper 10 on the scene, smoke showing three story complex making you Independence Command

- P10 stopped A/D corner
- Female civilian told them the fire was in the back
- P10 moved through east alley and spotted the rig North of structure on C/D Corner

7:29:40 ➢ (Pumper 10): Give me a working fire response

7:29:43 ➢ (Dispatch): Working fire response

7:29:46 ➢ (Pumper 23): 23's there

- Initially stopped the rig on A/D side and caught plug
- Realized fire and operations were on the backside of building
- Moved through east alley toward the back of structure with water supply for Pumper 10

7:29:49 ➢ (Dispatch): Pumper 23's on the scene

7:29:53 ➢ (Truck 3): Truck 3 on the scene

7:29:56 ➢ (Dispatch): Truck 3 on the scene

7:29:58 ➢ (Car 104): 104 on the scene assuming Independence Avenue Command

- Immediately took command post to C-side

7:30:02 ➢ (Dispatch): Car 104 on the scene assuming command

7:30:08 ➢ (Car 104): Bring me PD for traffic in a hurry

7:30:10 ➢ (Dispatch): Ordering PD

7:30:26 ➢ (Truck 10): 10 Truck's here

7:30:28 ➢ (Dispatch): Truck 10 on scene

7:30:30 ➢ (Pumper 23): Hey Chris on 23's have to bring it up the alley

- Catching hydrant on A/D corner

7:30:38 ➢ (Pumper 10): Heavy smoke on three floors

7:30:45 ➢ (Pumper 25): Pumper 25 on scene going to need another plug

7:30:51 ➢ (Dispatch): Somebody on scene?

7:30:52 ➢ (Dispatch on A1 Prime): Air 1, Car 212, Medic 35, Truck 5 working fire response 2608 Independence on the apartment fire. Repeat all.

7:31:07 ➢ (Pumper 25): The alley between the grocery store and building

7:31:19 ➢ (Car 104): Affirmative

7:31:19 ➢ (Car 104): 10 Truck or 3 Truck one of you come to the rear

7:31:26 ➢ (Truck 10): 10 Truck is committed to the front east corner

7:31:32 ➢ (Car 212): Car 212 responding switching to 5

7:31:36 ➢ (Dispatch): Car 212 responding switching to 5

7:31:39 ➢ (Medic 35): Medic 35 is on the way

7:31:41 ➢ (Dispatch): Medic 35 responding

7:31:43 ➢ (Truck 5): Truck 5 responding

7:31:46 ➢ (Dispatch): Truck 5 responding

7:31:50 ➢ (Dispatch): Rescue 1 responding

7:31:52 ➢ (Car 104): dispatch this is avenue command, prepare me for a second. Just preparing.

- Due to size of the building

7:31:59 ➢ (Dispatch): Can you repeat your traffic command?

7:32:05 ➢ (Dispatch): Message received.

7:32:05 ➢ (Rescue 1): Rescue 1

7:32:08 ➢ (Dispatch): Rescue 1 got your responding

7:32:12 ➢ (Rescue 1): on scene

7:32:14 ➢ (Dispatch): Rescue 1 on scene

7:32:23 ➢ (Air 1): Air 1 responding

7:32:30 ➢ (Car 105): Dispatch this Car -105

7:32:35 ➢ (Dispatch): Car 105 go ahead

7:32:36 ➢ (Car 105): I might be on Tac-5, but go ahead and show me responding down there to the avenue from downtown

7:32:43 ➢ (Pumper 10): Command Pumper-10

7:32:45 ➢ (Dispatch): Copy Car-105 address 2608 Independence Avenue

7:32:47 ➢ (Car 104): Go Pumper 10

7:32:50 ➢ (Pumper 10): We are making entry into the ??? seems to be where it's at

7:32:57 ➢ (Car 104): Copy that ??? stay on the first floor going to see if you guys can stop the egress before we need extra manpower.

7:33:05 ➢ (Pumper 10): Yea we got smoke coming out of the cracks down below

7:33:10 ➢ (Car 104): Copy that, 23's going to floor above you

- P10 initially went up the back stairs of the apartment to the second story
- Noticed smoke coming from the cracks in the porch of the second floor
- Took their line back down and made entry with T3 in back entrance of bar

7:33:21 ➢ (Medic 5): Medic 5 on scene

7:33:22 ➢ (Dispatch): Medic 5 on scene

7:33:23 ➢ (Truck 10): Command 10 Truck were going with 23's upstairs

7:33:30 ➢ (Car 104): copy that

7:33:49 ➢ (Car 104): Dispatch who is my oncoming truck company?

7:33:56 ➢ (Dispatch): Truck 5

7:33:59 ➢ (Car 104): Copy, I'm going to commit them, put me another truck company in route.

7:34:03 ➢ (Dispatch): Message received

7:34:10 ➢ (Car 104): 5 Truck this command you copy

7:34:14 ➢ (Truck 5): what was that, this is Truck 5

7:34:18 ➢ (Car 104): Come down Wabash just to the west side of the building, come around to the rear for me

7:34:25 ➢ (Truck 5): Truck 5 copy

7:34:30 ➢ (Car 105): Show 105 on scene

7:34:33 ➢ (Dispatch): Car-105 on the scene

7:34:36 ➢ (Car 104): Pumper 10 this is command you find the fire?

7:34:40 ➢ (Pumper 10): We have made entry but we don't see it

- Indicated low heat level in the bar
- T3 assisting in search for fire

7:34:46 ➢ (Dispatch): Truck 6 make the apartment fire 2608 Independence on Tac-5

7:34:49 ➢ (Car 104): Copy that I've got 25's down there coming in behind you

7:34:53 ➢ (Dispatch): Truck 6 are you still there?

7:34:53 ➢ (Pumper 10): Command we found it

- Some fire found in NW corner of bar in ceiling joists

7:34:58 ➢ (Truck 6): Truck 6 responding

7:35:01 ➢ (Dispatch): Truck 6 responding

7:35:02 ➢ (Car 104): Pumper 10 how much fire you got?

7:35:07 ➢ (Pumper 10): don't know yet we are hitting it now

- Reported extinguishing small fire but it kept coming back

7:35:12 ➢ (Car 104): Copy that Truck 5, we are going to be rescuing a person off the second floor when you get here

- Spotted civilian victim I on apartment balcony

7:35:22 ➢ (Truck 5): Truck 5 copy

7:35:25 ➢ (Car 101): Dispatch Car 101 responding to Independence Avenue

7:35:29 ➢ (Dispatch): 101 showing you responding Car-212 on scene

7:35:30 ➢ (Car 212): Car-212 on scene

7:35:34 ➢ (Rescue 1): Command Rescue 1 we got all clear primary first floor

7:35:39 ➢ (Truck 3): Truck 10 bring a saw to the roof

7:36:01 ➢ (Truck 10): 23-A, ten truck A ????

7:36:13 ➢ (Car 104): Dispatch command we are using two small right now

- Crews on second floor initially had low heat
- Crews made entry into multiple apartments searching for victims and fire

7:36:17 ➢ (Dispatch): using two small

7:36:23 ➢ (Car 120): Car-120 responding

7:36:25 ➢ (Dispatch): Car 120 responding

7:36:28 ➢ (Pumper 10): Command Pumper 10

7:36:34 ➢ (Truck 5): Truck 5 on scene

7:36:36 ➢ (Dispatch): Truck 5 on scene

7:36:48 ➢ (Car 104): Truck 5 right there we are gonna probably need a 28 footer

7:36:52 ➢ (Truck 5): Truck 5 copy

- T5 initiates ground ladder rescue of civilian victim I
- Civilian victim I reports a second victim still inside of apartment
- T5 along with P24 makes second rescue of civilian victim II

7:36:55 ➢ (Pumper 10): Command Pumper 10

7:37:05 ➢ (Pumper 10): Command Pumper 10

7:37:07 ➢ (Car 104): Go pumper 10

7:37:10 ➢ (Pumper 10): we just got ??? the fire but have not found the main seat yet

7:37:16 ➢ (Car 104): copy that

7:37:41 ➢ (Truck 3): Truck 10B bring a saw to the roof

7:38:14 ➢ (Car 104): Dispatch we have rescue going for two people second floor

7:38:20 ➢ (Dispatch): Rescuing two people from the second floor

7:38:52 ➢ (Car 104): Pumper 23 this is command you got any success up there?

7:38:54 ➢ (Medic 5): Medic 5 to dispatch

7:38:56 ➢ (Dispatch): Medic 5

7:38:59 ➢ (Medic 5): Go ahead and order me another unit

7:39:01 ➢ (Car 104): Pumper 24, are you ready for water?

7:39:02 ➢ (Dispatch): Medic 5 another unit being ordered

7:39:06 ➢ (Pumper 24): Hold on water for Pumper 24

7:39:12 ➢ (Medic 35): Medic 35 is here

7:39:15 ➢ (Dispatch): Medic 35 on scene

7:39:18 ➢ (Car 104): All suppression crews fire is now showing itself second floor rear second floor middle of apartment building. Got fire coming through windows. Pumper 23 do you see it?

7:39:21 ➢ (Dispatch): Medic 5
(10 minutes on scene)

7:39:34 ➢ (Car 104): Pumper 10, Pumper 25 fires above you, Pumper 23 addressing it now

- At some point after this P23 operating hand line, made entry into apartment C (C-side 2nd floor middle) where fire was now reported
- During the fire attack it was reported the line wasn't able to cool the room and the fire was not consistently presenting, crews eventually retreated to the hallway
- After this point most crews reported increasing levels of heat throughout the structure until evacuation

7:39:42 ➢ (Truck 6): Truck 6 on scene

7:39:43 ➢ (Pumper 25): Repeat that

7:39:43 ➢ (Dispatch): Medic 9, make the working apartment fire 2608 Independence Avenue A-5 (repeat)

7:39:47 ➢ (Car 104): Truck 6 be my RIT team for right now might have to use you here in a second

7:39:53 ➢ (Truck 6): copy

7:40:03 ➢ (Car 104): Roof sector this is command do you have that roof open

7:40:10 ➢ (Truck 3): We're working on it Chief can you have someone bring a saw up

7:40:15 ➢ (Car 104): Let me see if I can find someone John, I'll send six truck up with one. Six truck you copy

7:40:23 ➢ (Truck 6): copy

7:40:28 ➢ (Car 104): I think they got the roof laddered in the front six truck

7:40:39 ➢ (Medic 9): Medic 9 responding from North Kansas City of Kansas City

7:40:42 ➢ (Dispatch): Medic 9 showing your responding you're going to be third in

7:40:47 ➢ (Pumper 10): Command Pumper 10

7:40:50 ➢ (Truck 10): Command 10 truck committed to east side we won't be going to roof have someone go up and help 3 truck.

7:40:54 ➢ (Dispatch): Medic 9

7:40:57 ➢(Medic 9): Medic 9

7:40:59 ➢ (Medic 9): Yea we are third in on this fire do you know if we are coming in for a patient or are we additional stand-by

7:40:59 ➢ (Car 104): Go pumper 10

7:41:01 ➢ (Pumper 10): you got some below us we need some truckman on the second floor to open the floor up.

- Prior to this transmission P10 left the 1st floor bar and went to the 2nd floor to assist P23
- Crews indicated flames and heat coming through floor

7:41:06 ➢ (Dispatch): You're coming in for a patient they actually pulled two from the third floor. Medic 5 was the one that requested you and you've got Car-104 going to be your command

7:41:10 ➢ (Car 104): Copy that, six truck I need your interior personnel come to the rear you're going to go to the first floor

7:41:18 ➢ (Medic 9): Copy that what do my trauma centers look like

7:41:22 ➢ (Truck 6): copy

7:41:22 ➢ (Dispatch): Right now I'm showing all trauma centers open

7:41:25 ➢ (Air 1): Air 1 on the scene

7:41:26 ➢ (Medic 9): copy

7:41:28 ➢ (Dispatch): Air 1 on the scene

7:41:29 ➢ (Car 104): Dispatch give me another EMS unit. Stage another near-by

7:41:35 ➢ (Dispatch): Ordering a fourth EMS unit

7:42:00 ➢ (Dispatch): Unit 535 fourth in 2608 Independence on the apartment fire A-5 (Repeat)

7:42:05 ➢ (Car 104): Pumper 23 this is command

7:42:37 ➢ (Pumper 10): Command Pumper 10

7:42:40 ➢ (Car 104): Go pumper 10

7:42:42 ➢ (Pumper 10): We are trying to cut a hole in the floor now we know where it's at below us

7:42:53 ➢ (Pumper 10): We are just inside the doorway

7:42:59 ➢ (Car 104): copy that. 23's is up on that second floor, you found them yet

7:43:14 ➢ (Dispatch): Unit 528 make your assignment station 35. Unit 528 three five

7:43:19 ➢ (Medic 9): Command Medic 9 we are on the Avenue coming in from A the west east

7:43: 27 ➢ (Car 105): Medic 9 stage on the Avenue

7:43:33 ➢ (Medic 9): copy

7:43:42 ➢ (???): 75 command

7:43:47 ➢ (Car 104): Go

7:43:49 ➢ (???): Both those people you pulled out of the back are not going to go we are going to stay back here with 105

7:44:19: ➢ (Car 104): Dispatch go ahead and pop me a second

7:44:23 ➢ (Dispatch): Second alarm

7:44:33 ➢ (Car 104): Pumper 24 are you still committed?

7:44:39 ➢ (Pumper 24): ???

7:44:45 ➢ (Car 104): traffic repeat please

7:44:52 ➢ (Pumper 24): This is 24's, command what do you need?

7:44:56 ➢ (Car 104): 24 Pumper if your line is not needed there, come in we need to back up 25's here, we got heavy black smoke starting to come out of the second floor on the east side

7:45:07 ➢ (Car 105): Command this is 105

7:45:11 ➢ (Car 104): Go 105

7:45:13 ➢ (Car 105): That heavy black smoke is on the first floor in the bar, you got to access it off the Avenue so have that pumper come around the front with me, we will force entry and make our way in that way

7:45:16 ➢ (Dispatch): Now a second alarm Car-102, High Rise 102, Medic 40, Pumper 9, Pumper 27, Rescue 31, Truck 2, Truck 12; 2608 Independence Avenue on apartment fire, A-5

7:45:24 ➢ (Car 104): Copy that, I might have to have them grab a line off of one of their front pumpers

7:45:38 ➢ (Dispatch): Pumper 18 and Pumper 8 stand-by for an assignment

7:45:47 ➢ (Truck 2): Truck 2 on the scene from the south, Command you got an assignment

7:45:48 ➢ (Pumper 18): Pumper 18 is really close to that fire. You want us to make it

7:45:52 ➢ (Car 104): ???

7:45:55 ➢ (Truck 2): Truck 2 from the south

7:45:57 ➢ (Dispatch): Pumper 18, go for it

7:45:58 ➢ (Pumper 9): Dispatch pumper 9

7:46:00 ➢ (Dispatch): Pumper 9

7:46:03 ➢ (Pumper 9: We are at the downtown airport and will have to go back to the station to get high rise

7:46:09 ➢ (Dispatch): Copy that, I'm going to switch you for pumper 18

7:46:09 ➢ (Car 102): 102 responding

7:46:10 ➢ (Pumper 8): Dispatch this is pumper 8, we're in service from the downtown airport do you want us to make that second

7:46:12 ➢ (Dispatch): Car 102 responding

7:46:17 ➢ FDEMS (Dispatch): answering phone call on request for Red Cross

7:46:20 ➢ (Dispatch): Pumper 8 stand-by, Pumper 9 I'm showing you returning to your station, Pumper 18 your responding 2608 Independence Blvd.

7:46:23 ➢ (Car 530): Car-530 responding

7:46:26 ➢ (Dispatch): Car-530 responding

7:46:28 ➢ (Pumper 25): Command 25's we're hitting something in the basement

7:46:29 ➢ (Car 120): 120 on scene

7:46:31 ➢ (Dispatch): Car-120 on the scene

7:46:32 ➢ (Pumper 9): Dispatch you guys still need High Rise 102 though

7:46: 33 ➢ (Dispatch): 25's you're on A-1 switch to A-5

7:46:35 ➢ (Truck 12): Truck 12 responding

7:46:36 ➢ (Dispatch): That is correct

7:46:37 ➢ (Dispatch): Truck 12 responding

7:46:38 ➢ (Pumper 27): Pumper 27 responding

7:46:38 ➢ (Pumper 9): Copy we're in route to get it

7:46:41 ➢ (Dispatch): Pumper 27 responding

7:46:41 ➢ (Dispatch): copy

7:46:45 ➢ (Rescue 31): 31 is responding

7:46:47 ➢ (Dispatch): Rescue 31 responding

7:46:52 ➢ (Truck 6-B): Six Truck B to T-10 B extend the line and extend it a little for me

7:47:05 ➢ (Rescue 31): Command this is Rescue 31 do you have an assignment

7:47:13 ➢ (Car 104): 31 stay on the Avenue be my RIT team I like to have to get people out of here in a hurry

7:47:23 ➢ (Rescue 31): Command 31's do you have an assignment?

7:47:33 ➢ (Dispatch): Rescue 31 command requested that you stay on the Avenue and become the RIT team

7:47:44 ➢ (Truck 2): Command 2 Truck do you have an assignment for 2 Truck

7:47:51 ➢ (Car 104): 2 Truck come to the rear, gonna need you on the second floor

7:47:57 ➢ (Car 104): 23 Pumper this is command how are conditions?

7:48:07 ➢ (Car 104): Truck 10 how are conditions there?

7:48:36 ➢ (Car 105): Command this is 105

7:48:45 ➢ (Car 104): Pumper 10 this is command Pumper 10 this is command

7:48:49 ➢ (Rescue 1): We got heavy smoke and fire showing from the bar

7:48:53 ➢ (Car 105): Command this 105 the front lit up in the nail salon looks like it's gonna light up all the way down. Think about pulling them out.

7:49:01 ➢ (Car 104): Yea I'm gonna pull em out. Command, give me, give me sounds, I need everybody out everybody out of there

7:49:16 ➢ (Dispatch): Emergency Tones

7:49:19 ➢ (Dispatch): Evacuate the structure everyone evacuate the structure all companies evacuate the structure

7:49:27 ➢ (Dispatch): Provide PAR

7:49:41 ➢ (Pumper 18): Pumper 18 on scene

7:49:44 ➢ (Dispatch): Pumper 18 on scene

7:49:45 ➢ (Car 104): All company officers give me a PAR. All company officers give me a PAR

7:49:59 ➢ (Car 105): Car-105 PAR, Rescue-31 PAR, and Pumper-24 PAR
(20 minutes into incident)
- All crews proceeded with defensive operations

7:50:14 ➢ (Truck 5): Truck-5 PAR

7:50:19 ➢ (Dispatch): Truck 5 PAR

7:50:20 ➢ (Car 105): 18 Pumpers PAR

7:50:26 ➢ (Pumper 25): Pumper-25's PAR

7:50:32 ➢ (Pumper 10): Pumper-10's PAR

7:50:49 ➢ (Car 105): 23's PAR

7:50:53 ➢ (Pumper 27): Pumper-27's on the scene

7:50:57 ➢ (Dispatch): Pumper 27's on the scene

7:51:04 ➢ (Car 102): Car-102's on the scene

7:51:06 ➢ (Dispatch): Car-102 on scene

7:51:08 ➢ (Truck 10): Command ten Truck A

7:51:17 ➢ (Car 101): 101's on scene conferring with command

7:51:21 ➢ (Dispatch): Car-101 on scene conferring

7:51:24 ➢ (Car 104: 101 I'm in the rear. Truck-5 let's set up for a fly pipe, Truck-3 in the front

7:51:34 ➢ (Pumper 27): Pumper-27 to command where do you need us

7:51:38 ➢ (Truck 10): Command ten Truck A

7:51:50 ➢ (Car 104): 27's stay in staging there

7:51:55 ➢ (Pumper 27): 27's copy

7:51:58 ➢ (Pumper 10): Pumper-10's PAR

- All crews were verified PAR
- Many of the companies on scene reported face to face PAR

7:52:12 ➢ (???): Dispatch to ???

7:52:18 ➢ (Truck 6): Truck-6-B this is Truck 6-A

7:52:34 ➢ (Car 600): Car 600 responding as safety

7:52:39 ➢ (Dispatch): showing you you're responding

7:52:40 ➢ (Car 104): 105 this is command

7:52:48 ➢ (Truck 10): Ten Truck-B, this is Ten Truck-A, what is your location?

- This transmission was not part of the PAR procedure

7:52:55 ➢ (Car 104): I'm in the rear Truck-10

7:53:00 ➢ (Car 104): 105 this command

7:53:03 ➢ (Car 105): 105 go

7:53:06 ➢ (Car 104): Hey do I have another pumper out there I'm gonna set Truck-6 in the North West corner. I need a pumper to feed them. I'm setting 5-Truck in the rear here. I have 3-Truck in the front

7:53:22 ➢ (Car 105): I think you can have 27's. I got 18's pulling a 2 ½ and I got 24's using a 1 ¾ . I think the whole front is gonna light up in a second

7:53:34 ➢ (Car 104): Copy, the back just did about 2 or 3 minutes ago. I'm gonna try and set these trucks up with pumpers to feed them.

7:53:42 ➢ (Truck 12): Truck-12's on scene from the NW

7:53:45 ➢ (Dispatch): Truck-12's on the scene

7:53:51 ➢ (Truck 10): 10-Truck to command

7:53:58 ➢ (Truck 6): Truck-6-B this Truck-6-A

7:54:06 ➢ (Pumper 23): ??? We need a pumper to the front of the building

7:54:16 ➢ (Car 101): Command this is 101 what's your location

7:54:20 ➢ (Car 104): 101 I'm in the rear

7:54:31 ➢ (Rescue): Rescue-1-A to firefighter ???

7:54:38 ➢ (Rescue 1): Go ahead we're outside ??? outside

7:54:43 ➢ (Rescue 1): Where are you?

7:54:46 ➢ (Rescue 1): Front of the rig

7:54:49 ➢ (Car 104): 105 I'm look for Truck-10 FAO do you have Truck-10 FAO up front?

7:54:57 ➢ (Car 105): I will look, I don't know

7:55:01 ➢ (Rescue 1): Rescue-1 has PAR

7:55:04 ➢ (Truck 10): Truck-10-B to command we got the east corner we can switch from rescue to fly pipe

7:55:13 ➢ (Car 104): Copy that we will get you a pumper to feed you

7:55:18 ➢ (Truck 5): Command this Truck-5

7:55:21 ➢ (Car 104): Go Truck-5

7:55:23 ➢ (Truck 5): We are set up on the back side of the building her I think we just need a pumper

7:55:29 ➢ (Car 104): Copy that we will probably have Pumper-10 here feed you

7:55:36 ➢ (Car 101): Command this is 101 can you come to the Independence Avenue side?

7:55:42 ➢ (Car 104): Copy that Dispatch I need KCP&L emergency please

7:55:47 ➢ (Dispatch): KCP&L

7:55:50 ➢ (Truck 6): Command this Truck-6

7:55:54 ➢ (Car 104): Go Truck-6

7:55:57 ➢ (Truck 6): We are not going to be able to get out of the front to get over there Truck-12 is coming in there now

7:56:07 ➢ (Pumper 9): Pumper-9 and High Rise 102 responding

7:56:12 ➢ (Dispatch): High Rise 102 responding

7:56:21 ➢ (Car 105): Command this is 105

7:56:24 ➢ (Car 104): Go 105 I'm coming around now

7:56:27 ➢ (Car 105): I got 27-Pumper do you need them in back?

7:56:32 ➢ (Car 104): We need to find another hydrant to fee these other trucks

7:57:04 ➢ (Car 530): Car-530 on scene reporting to medical

7:57:08 ➢ (Dispatch): Car 530 on the scene

7:57:31 ➢ (Truck 5-C): Command Truck-5

7:57:35 ➢ (Truck-5-B): Go ahead

7:57:40 ➢ (Truck 5-C): We are set up in back we just need a pumper

7:57:50 ➢ (Truck 12): Command Truck-12 we are set up in back also we need a plug

7:57:58 ➢ (Rescue 31): Command this 31-A

7:58:07 ➢ (Car 101): Dispatch this is 101

7:58:10 ➢ (Dispatch): Go 101 go ahead

7:58:13➢ (Car 101): 101's gonna have command, 104's gonna be operation and I'll have assignments for 102 and 105 shortly.

7:58:22 ➢ (Dispatch): Message received car 101 making you command

7:58:30 ➢ (Car 100): Car 100 on scene

7:58:33 ➢ (Dispatch): Car 100 on the scene

7:58:35 ➢ (Dispatch): Dispatch to command

7:59:44 ➢ (Pumper 8): background noise

7:59:59 ➢ (Car 101): Command to dispatch

8:00:03 ➢ (Dispatch): Command go ahead

8:00:07 ➢ (Car 101): Hey give me emergency tones I'm gonna move everybody back were gonna create a collapse zone

8:00:13 ➢ (Dispatch): Copy

8:00:22 ➢ (Dispatch): Emergency Tones

8:00:27 ➢ (Dispatch): All companies move back, all companies move back create a collapse zone

- Crews indicated that multiple companies on the C and D side did not hear the collapse zone over the radio

8:00:59 ➢ (Car 101): Operations this command

8:01:09 ➢ (Car 101): Car-104 this is command

8:01:15 ➢ (Car 104): ???

8:01:18 ➢ (Car 101): Hey I need you in front with me

8:01:41 ➢ (Pumper 9): Pumper-9 and High Rise 102 on the scene from the west on the Avenue

8:01:46 ➢ (Dispatch): Pumper-9 and High Rise 102 on the scene from the West

8:01:58 ➢ (Car 105): Command this is C side

8:02:13 ➢ (Car 105): Command this is C side

8:02:23 ➢ (Car 101): This is command go ahead

8:02:26 ➢ (Car 105): Letting you know I've got one fly pipe in operation 5-Truck working. 27's hooking up to Truck-12 getting ready to fly pipe. We got fire on two floors showing from a view of the building.

8:02:41 ➢ (Car 101): Copy that 105 thanks

8:02:49 ➢ (Car 104): Pumper-18 this is Ops where you at?

8:02:56 ➢ (Car 101): Dispatch this is command we have power killed to the building?

8:03:01 ➢ (Dispatch): Message received power off

8:03:06 ➢ (Pumper 18): Pumper-18's on the SE corner hitting it with a 2 ½

8:03:38 ➢ (Truck 6): Truck-6-A this Truck-6-B we are ready for water

8:04:03 ➢ (Dispatch): message received

8:04:29 ➢ (Car 102): Command this D David 23's on the D David side they are putting a line in operations without a water source, if you have anybody available that can bring them a water source they could use it

- Crews on the D-side had fire impinging on P23 from multiple windows
- One of those windows also had an obstruction blocking a portion of the window
- At one point a lathe hook was used to help clear the obstruction

8:04:50 ➢ (Truck 10): Ten-trucks available for a water source for fly pipe operations

8:05:06 ➢ (Car 101): Pumper-18 this is command

8:05:14 ➢ (???): On scene conferring with command

8:05:20 ➢ (Car 101): Pumper-18 this is command

8:05:25 ➢ (Pumper 18): This Pumper-18 go ahead

8:05:29 ➢ (Car 101): Go ahead and shut those handlines down and feed Truck-6

8:05:35 ➢ (Pumper 18): Copy we are on it

8:05:39 ➢ (Car 940): Dispatch car 940 is on scene

8:05:44 ➢ (Dispatch): Car 940 on the scene

8:05:48 ➢ (Pumper 27-D): Pumper-27-B this Pumper -27-D, let me know when you're ready for water

8:05:55 ➢ (Pumper 27-B): Stand-by

8:06:04 ➢ (Car 101): 102 this is command

8:06:08 ➢ (Car 102): Go ahead

8:06:11 ➢ (Car 101: Garbled (Mic keyed during collapse)

8:06:16 ➢ (Car 105): Command, command we had a collapse on the D side Collapse on the D side

8:06:24 ➢ (Car 102): Respond a Mayday we had a collapse

8:06:30 ➢ (Car 101): Dispatch this is command we've had a collapse on the east side. 102 you copy

8:06:37 ➢ (Car 102): ??? We are extricating people now

8:06:41 ➢ (Dispatch): Collapse on the east side

8:06:41 ➢ (Car 105): Mayday, Mayday, Mayday this 105 go ahead and start me three more ambulance

8:06:48 ➢ (Dispatch): Order three more ambulances

8:06:49 ➢ (Car 102): Have to activate a RIT on the D Davis side

8:06:50 ➢ (Dispatch): Tones:

8:06:56 ➢ (Dispatch): Mayday has been declared, Mayday has been declared, curtail all non-essential radio traffic, go to A-6 all traffic go to A-6

8:07:05 ➢ (Pumper 27-D): Pumper-27 send us water, pumper -27 open up the hydrant

8:07:10 ➢ (Pumper-27-B): Opening up

8:07:14 ➢ (Car 101): Guys let's get a hand line on that east side, see if we can control that fire

8:07:22 ➢ (Dispatch): Tones:

8:07:39 ➢ (Dispatch): Car-106, Medic-6, Pumper-17, Pumper-28, Truck-7, 531, 533; Mayday on A-6, Mayday on A-6; 2608 Independence Avenue all companies A-6.

8:07:40 ➢ (Car 101): Dispatch this is command start all rescues this way

8:07:48 ➢ (Dispatch): All rescues

8:07:55 ➢ (Car 101: Copy that I think Rescue-1's here, I need the other two if they are not already in staging

8:08:01 ➢ (Dispatch): You have everyone except Rescue-9, we will get them going

8:08:05 ➢ (Car 101): Copy that

8:08:08 ➢ (Dispatch): and 531, 2608 Independence Avenue all companies go to A-6, A-6 for your assignment

8:08:16 ➢ (Car 102): Command D sector do we got anybody that can put a line in service here?

8:08:29 ➢ (Car 101): 102 we have lines coming your way

8:08:34 ➢ (Car 600): Safety Command

8:08:38 ➢ (Pumper 27): Pumper-27 to command

8:08:44 ➢ (Car 530): This is car 530

8:08:48 ➢ (Dispatch): Car-530

8:08:50 ➢ (Car 600): Command this is safety

8:08:54 ➢ (Pumper 27): Pumper-27 we are pouring water to Truck-12 do you need to reassign us to anything else

8:09:02 ➢ (Car 530): Do we have any closures for trauma?

8:09:07 ➢ (Dispatch): Just Center Point is the only trauma closure all others are open

8:09:12 ➢ (Car 530): Copy

8:09:13 ➢ (Dispatch): Other unit on two

8:09:17 ➢ (Medic 40): Medic 40

8:09:19 ➢ (Dispatch): Medic 40

8:09:20 ➢ (Dispatch): Rescue-9, make the Mayday, 2608 Independence Avenue on apartment fire on A-6

8:09:21 ➢ (Rescue 9): We have been on scene for about 5ive minutes sorry for forgetting to let you know

8:09:22 ➢ (Car 600): Command this is safety looks like we are going to be transporting three transporting three

8:09:26 ➢ (Dispatch): Copy Medic-40 on the scene

8:09:30 ➢ (Pumper 27): Pumper-27 to command

8:09:37 ➢ (Rescue 9): Dispatch Rescue-9 is going to respond to that, can you ask command do we need our support rig?

8:09:42 ➢ (Medic 35): Medic-35 to Medical

8:09:44 ➢ (Dispatch): Rescue-9 showing you responding I'll find out

8:09:47 ➢ (Car 600): Command safety, were gonna have a fourth fire fighter down at this time, we're gonna need four transport units for fire fighters.

8:09:53 ➢ (Car 530): Dispatch Car 530

8:09:58 ➢ Charge 24's line

8:09:58 ➢ (Car 304): Dispatch this is 304, I'm gonna respond over to the fire since I have rescues headed that way

8:10:02 ➢ (Medic 35): Medic-35 to medical

8:10:05 ➢ (Dispatch): Copy Car-304 your traffic will be A-6, 530

8:10:14 ➢ (Car 105): Safety this is 105

8:10:18 ➢ (Car 530): Dispatch Car-530

8:10:20 ➢ (Dispatch): Car-530 go

8:10:21 ➢ (Medic 35): Medic 35 to 105, I'm triaging two back her, we're going to transport. Give me another ambulance back here.

8:10:23 ➢ (Car 530): I need two additional ambulances on scene, so we have a total of six

8:10:29 ➢ (Dispatch): Copy, total of six

8:10:32 ➢ (Car 105): Command go ahead and let an extra ambulance respond to the reach the C side

8:10:34 ➢ (Dispatch): Medic-14, Medic-16, Medic-34

8:10:41 ➢ (Dispatch): Medic-36 make the apartment fire with four patients 2608 Independence on A-6 (repeat)

8:10:44 ➢ (Car 600): 24-Pumper, 24-Pumper this is safety

8:10:51 ➢ (Dispatch): 530 you're also getting Medic-34 and Medic-36 responding

8:11:00 ➢ (Dispatch): Medic-16, Medic-36, also make the apartment fire 2608 Independence please go to A-5, A-5 for dispatch

8:11:02 ➢ (Dispatch): Dispatch command

8:11:09 ➢ (Car 101): Command go ahead

8:11:10 ➢ (Dispatch): What direction would you like your ambulances coming from?

8:11:16 ➢ (Car 101): Bring them to Independence Avenue and Prospect

8:11:20 ➢ (Dispatch): Copy

This incident continued until the afternoon of October 13th requiring a considerable amount of department resources. For the purpose of this investigation and the summary of audio files, this timeline narrative is concluded after all injured firefighters were transported from the scene.

Appendix B

Collapse Zone

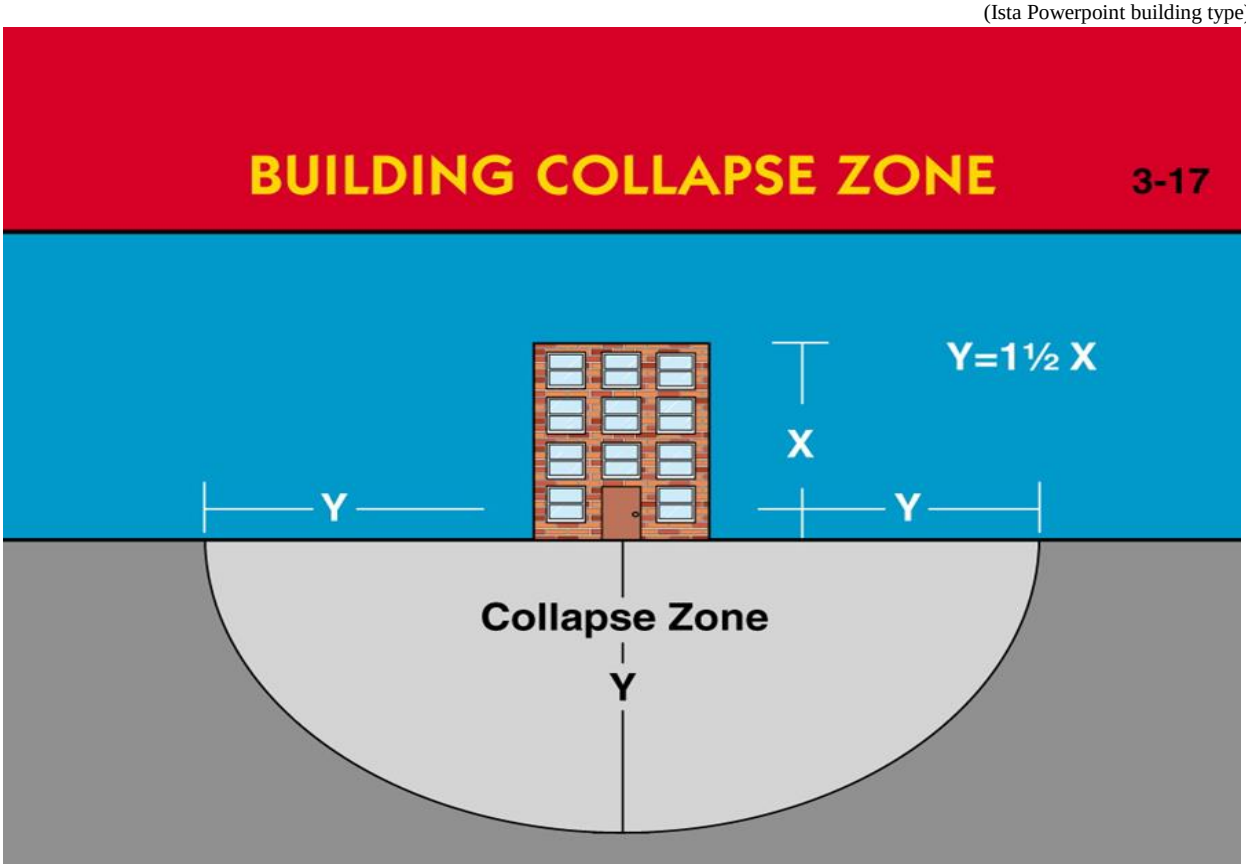
The United States Fire Administration reported that 1,230 FireFighters died between 2000 and 2012. Structural collapse caused 142 of these FireFighter deaths (11.5%). The number of fatalities includes FireFighters killed by collapse inside and outside a structure.

A collapse zone is defined as the area around the perimeter of a structure that could contain debris if the building collapsed. This area is often defined by establishing a perimeter at a distance from the building that is equal to 1 ½ times the height of the structure.

When established, a collapse zone should be identified by a fireground transmission, colored tape, signage cones, flashing beacons, fences, or other appropriate means. A "No Entry" policy should be enforced by the Incident Commander, Incident Safety Officer, Division Group Supervisor, and company officers. When it is not possible or practical to visually mark a collapse Zone, the Incident Commander should verbally identify the collapse zone area to all fireground personnel via radio or other communication methods.

Reference: Workplace Solutions National Institute for Occupational Safety and Health

(Ista Powerpoint building type)



Appendix C

KCFD Operational Policies

GOGs/GAGs/Policies; Investigation review

The following GOGs/GAGs/Polices were chosen as very relevant and examined.

GAG 5-1: In-Service Training

To standardize and improve the quality of company drills and ensure that all firefighting companies are receiving training in the areas that are essential to the functions of job performance.

Summation: The KCFD should promote regular, consistent, department initiated field training for all members. KCFD should also facilitate company level, company developed training. Consistency, relevancy, and long term commitments to the established purpose are needed. Practical and attainable solutions are essential.

Many attempts by dedicated members have not yielded consistent results in this area. Though difficult to attain, this goal cannot be left undone. Revisions should include methods to measure quality of trainings and updated terminology.

The perceived impact relevant to this investigation centers on ensuring that high-risk situations are recognized as early as possible in any given incident, through proven, high-quality emergency scene risk assessment training.

GAG 5-12: Regular Core Competency Training

The effectiveness of our response to any emergency depends upon all individuals and units being prepared to perform in safe, consistent, and reliable fashions to deliver effective, efficient, and predictable outcomes. The purpose of this GAG is to ensure all members, irrespective of their organizational assignment, possess identified basic knowledge, skills, and abilities (KSAs) which will allow incident mitigation consistent with these principles, regardless of the units or individuals assigned to any particular incident or event. These competencies are to be regularly reviewed and evaluated to ensure effective integration at the company, battalion, and agency levels.

Summation: The KCFD should determine how to make such training consistent. Fundamental changes in deployment of training resources and staff could be considered. Core competencies could evolve into a broad-based career development plan for all members of the KCFD. Review for needed updates and revisions should be performed.

The perceived impact relevant to this investigation regards regular core competency training related to fire scene events, including Spotting Apparatus, Advancing Hand Lines, Exit(ing) Hazardous Areas, Street Pipe Operations, Aerial Operations, Flypipe Operations, and Fireground Operations for Incident Command.

GOG 11-2: May Day Communications

To identify proper procedures when activating a "MAY-DAY", and to identify roles and responsibilities of the Incident Commander, on-scene fire personnel, and Communications Center.

Summation: The KCFD should study whether the responsibilities in this GOG are sustainable when May-Day events occur and if the procedures are relevant for interior and exterior operations. It was found at this event, that May-Day responsibilities were extremely difficult to accomplish in the ensuing chaos.

The perceived impact relevant to this investigation is that May-Day operations were not contributing factors to the tragedy as they took place after the collapse. Rapid Intervention Teams were not hindered nor was medical care impeded by the ensuing May-Day procedures.

GOG 11-9: KCFD Accountability

To ensure all emergency scene supervisors have the resources to account for all personnel in any geographical area.

Summation: This GOG deals almost entirely with the administration of Personnel Accountability Safety System cards, in both emergency and non-emergency contexts. Impractical, outdated, and inefficient for emergency scene use, the GOG has not been widely used since implementation. Some problematic components include the inefficiency of an Accountability Officer who often is the Safety Officer to collect IDs from apparatuses, the ease by which ID cards may be in the wrong configuration or inaccurate (e.g. trade time, lost cards, card replacement gaps, district details, district reassignment), and difficult transferability at large-scale incidents such as high rise operations.

However, it is very important to note that though this GOG is rarely executed as written, accountability for personnel operating at emergency scenes is tracked systematically and regularly by KCFD Incident Commanders. KCFD Incident Commanders are encouraged to use tactical worksheets or effective tracking mechanisms, like simple hand written notes or charts that are effective for each incident commander to maintain accountability.

The perceived impact relevant to this investigation is that PASS cards had no bearing on the outcome of the incident.

GOG 11-9.1: KCFD Personnel Accountability Report (PAR) Procedures

To establish a standard procedure for incident commanders, and other officers, working within the incident management system, to quickly obtain verbal accountability of on-scene personnel.

Summation: This GOG is effectively and routinely used by KCFD Incident Commanders at emergency events. Simple and straightforward, major revision is not recommended. However, it is recommended to evaluate the potential benefit of additional benchmark PARs, such as "Evacuation Zone" and "Safety Concern/Urgent Message" PARs. Language points could be strengthened (e.g. pg. 3, paragraph 1, "The Incident Commander should consider ordering will perform a PAR when:…"

The perceived impact of this policy relevant to this investigation is that accidental errors were made by personnel on the scene; errors of omission not commission. Supervising officers are responsible for the welfare of their crews at all times, but movements of personnel and tactics are ever evolving on an emergency scene. Changes of strategy and tactics require a given amount of time for such transitions. It is well documented that the collapse and ensuing tragedy happened during a transition of tactics and personnel movement minutes after a collapse zone was requested. Sections of other KCFD policy, such as KCFD IMS, have similar responsibility points regarding accountability.

FireFighter Safety Manual

To establish safe work practices that are directed toward controlling or eliminating hazardous conditions which may result in numerous and/or serious injuries and property damage. To establish the responsibilities of supervisors, the employees, the Fire Department Safety Committee and the Human Resource Department when accidents occur. These procedures shall be consistent with the existing language of the Memorandum of Understanding between the City and IAFF Local 42, the Administrative Code of the City of Kansas City, Missouri and other pertinent statues, ordinances, directives and regulations.

Summation: This policy encompasses emergency scene and workplace safety practices. Broad in scope but containing many specific practices, the policy should be reviewed for completeness and cohesiveness with other polices. Solutions for directing comprehensive safety messages through all policies should be examined, as well as on-scene communications. Language points and terminology could be updated as well.

The perceived impact of this policy relevant to this investigation is that there was a brief breakdown of safety procedures. The perceived breakdowns were based on transitioning movements of crews on the scene, lack of effective communication, and positioning of apparatus.

As noted from GOG 11-9.1 summary, "accidental errors were made by personnel on the scene; errors of omission not commission. Supervising officers are responsible for the welfare of their crews at all times, but movements of personnel and tactics are ever evolving on an emergency scene. Changes of strategy and tactics require a given amount of time for such transitions. It is well documented that the collapse and ensuing tragedy happened during a transition of tactics and personnel movement minutes after a collapse zone was requested." Safety considerations were directing incident objectives, but crew based tactics had not fully transitioned out of the collapse zone.

It is also documented that several on-scene members reported that the orders to set up a collapse zone were not heard. Effective communication can be elusive with on-scene machinery, task accomplishment, and consistent radio traffic, as was reported the case at this scene.

Apparatus positioning on side D (east) led to at least one apparatus in the eventual collapse zone. While initial interior operations may have merited this positioning for lengthy attack line needs, moving apparatus out of the collapse zone once operations moved to "defensive" should have been a priority.

It is noteworthy to report that there were no on-scene indicators of imminent structural collapse. All interviews and accounts indicate either no or virtually no time between visual evidence of collapse and actual collapse of the east side of the building.

KCFD Rules and Regulations

To establish an efficient, equitable and functional system of human resource management within the Kansas City, Missouri Fire Department, based on merit principles, which govern the appointment, promotion, transfer, layoff, dismissal, discipline and other related conditions of employment. These procedures shall be consistent with the existing language of the Memorandum of Understanding between the City and IAFF Local 42, the Administrative Code of the City of Kansas City, Missouri and other pertinent statues, ordinances, directives and regulations.

Summation: Broad in purpose and scope, this policy has valuable and critical information that pertains to many aspects of KCFD operations, in both day to day human resource administration and emergency response procedures. There may be, however, value in reviewing the contents for placement in GAGs, GOGs, or other policies, as there are "overlapping" sets of instructions between this and other policies. Additionally, content seems to proceed well beyond the bounds of "the appointment, promotion, transfer, layoff, dismissal, discipline and other related conditions of employment."

The perceived impact of this policy relevant to this investigation is related to effective training of KCFD personnel and effective safety procedures and practices. While impossible to measure the impact on this event, high-quality, ongoing training is paramount. (See notes in sections about

GAG 5-1 In-Service Training and GAG 5-12 Regular Core Competency Training.) Safety and notification procedures should be evaluated in light of recognized industry best practices.