5210 LINDEN HEIGHTS AVE

INCIDENT REVIEW TEAM

FEBRUARY 26, 2026

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LETTER FROM CHIEF OF FIRE DEPARTMENT

On October 19, 2023, during fire attack operations at a multi-alarm fire at 5210 Linden Heights Avenue in Northwest Baltimore, several Baltimore City Fire Department (BCFD) members were injured. Tragically, Captain Dillon Rinaldo and EMT/Firefighter Rodney Pitts III succumbed to their injuries. Their loss has left an indelible impact on our department, our families, and our community.

At the BCFD, we are more than a workforce—we are a family. We train together, respond together, and when tragedy strikes, we grieve together. The loss of life, whether on or off duty, reverberates through every station, every shift, and every corner of our department. It is imperative that we recognize and address the emotional trauma experienced by our members as they process the heartbreaking loss of their BCFD brothers.

In the immediate hours following the incident, resources were mobilized to support our members and their families. Our Chaplain Team, the BCFD Critical Incident Stress Management (CISM) Team, and the Peer Support Team (PST) were deployed to provide both immediate and ongoing assistance. These efforts were supplemented by support from surrounding jurisdictions, for which we remain deeply grateful. BCFD recognizes that mental health support services are essential to safeguarding the emotional and psychological well-being of our firefighters and emergency medical professionals, who routinely operate in high-risk, high-stress environments. Providing safe spaces for our members to express emotions, share experiences, and seek help is not only beneficial—it is necessary. Experience and research have consistently shown that early intervention, open communication, and access to mental health resources are critical to healing.

In the immediate aftermath of this devastating incident, I commissioned a panel to serve as a Board of Inquiry (BOI). The Board's leadership was granted autonomy to assemble a committee comprised of personnel from within the Baltimore City Fire Department, as well as members from outside agencies, as they deemed appropriate. Additionally, I requested investigative assistance from the National Institute for Occupational Safety and Health (NIOSH) and Underwriters Laboratories – Fire Safety Research Institute (UL FSRI), with the intent not only to investigate the incident but to conduct a comprehensive, 360-degree review of our operations. Concurrently, the BCFD cooperated fully with investigations conducted by Maryland Occupational Safety and Health (MOSH) and the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF).

The BOI included members from various ranks within BCFD , as well as representatives from the Baltimore County Fire Department, Prince George's County Fire Department, and the District of Columbia Fire and Emergency Medical Services Department. UL FSRI personnel were also integrated into BOI's investigative efforts. The purpose of the BOI was not to determine the cause or origin of the fire, or to assign blame. Rather, the Board was charged with conducting a detailed and comprehensive review of the circumstances leading up to, during, and following the events at Linden Heights Avenue. The BOI's work was guided by a single principle: What can BCFD do better? How can we enhance our training, policies and procedures, communication, and operational readiness to prevent a tragedy like this from occurring again?

LETTER FROM CHIEF OF FIRE DEPARTMENT

The BOI's work represents a critical step in honoring the memories of Captain Rinaldo and EMT/Firefighter Pitts by ensuring that lessons are learned, applied, and embedded into the culture of our department.

The BOI conducted its review parallel to the MOSH investigation. MOSH ultimately concluded that there was no wrongdoing on the part of the Baltimore City Fire Department. In addition, the BCFD Fire Investigation Bureau (FIB) and the ATF conducted independent, detailed investigations into the incident. The ATF classified the incident as *accidental* and concluded that the cause of the fire was *undetermined*..

I extend my deepest gratitude to every member of the Chaplain Team, the CISM Team, and the Peer Support Team. Your dedication, compassion, and presence during our department's most difficult moments made a profound difference. You were there when we needed you most, and for that, we are truly thankful. I also extend my sincere appreciation to the members of the Board of Inquiry, as well as our mutual aid partners and allied agencies, for their continued support. Your commitment to assisting us through this difficult time and supporting our members in their recovery will never be forgotten.

We remain steadfast in our commitment to transparency, accountability, and continuous improvement—on behalf of our firefighters, their families, and the community we are sworn to protect. The lessons learned from this tragedy, and from the exhaustive work of the Board of Inquiry and our partner agencies, will guide us as we strengthen policies, enhance training, and refine our operational readiness. Our responsibility as a fire department extends beyond emergency response; it includes learning from every incident, honoring those we have lost , and fostering a culture in which every member feels supported, valued, and protected.

As we move forward, we do so with humility, determination, and a renewed sense of purpose. We owe it to Captain Dillon Rinaldo, EMT/Firefighter Rodney Pitts III, and to every member of the Baltimore City Fire Department—past, present, and future, to continue striving for excellence in all that we do.

With honor and commitment,

James Wallace
Fire Chief
Baltimore City Fire Department

ACKNOWLEDGEMENTS

The Baltimore City Fire Department would like to acknowledge the following jurisdictions and people for their tireless efforts in helping to complete this report.

Prince George's County Fire Department
District of Columbia Fire Department
Baltimore County Fire Department
Auxiliary Member – Mr. Howard Scher, BCFD
Unit Complement Photo's – Mr. Howard Meile, BCFD; Retired
Underwriters Laboratory; Fire Safety Research Institute, Mr. Daniel Madrzykowksi, Ph.D.
Third-Party PPE & SCBA Evaluator – Mr. Jeffrey Stull
Ms. Kimberly Washington, Civilian Contributor
Alcohol, Tobacco, Explosives & Firearms – ATF
Johns Hopkins Bayview Burn Center
Members that provided statements, photos, videos, and personal biometric data

EXECUTIVE SUMMARY

On October 19, 2023, two members of the Baltimore City Fire Department were severely injured and later died from smoke and thermal injuries sustained while performing interior firefighting duties in a row house fire at 5210 Linden Heights Avenue in Northwest Baltimore City. The members were working together to extinguish the fire as the crew of Engine 29, the first arriving unit. All occupants were out of the home and no civilian injuries were reported on the incident.

The Lieutenant, promoted to Captain posthumously, was a 6-year veteran of the BCFD with 15 months' experience as a Lieutenant. The firefighter had less than 1 year in the BCFD. He was still serving his probationary period, identified by a yellow helmet. It was his nineteenth, 24-hour shift and his first significant fire.

The weather was sunny, 70 degrees Fahrenheit, with no precipitation and a light wind from the south. The fire building was an occupied dwelling. The 1,788 square foot, two story, ordinary construction brick row home was built in 1901. It was the second house from the end unit.

The fire started at 15:33 hours, discovered by contractors working on an adjacent dwelling at 5208 Linden Heights Avenue. The first 911 call was received 6 minutes later at 15:39 hours.

The initial alarm was dispatched at 15:41 hours and consisted of Engine 29, Engine 45, Engine 52 as the Rapid Intervention Team, Engine 20, Engine 44, Truck 25, Truck 16, Battalion Chief 5, Battalion Chief 3, and Safety Officer 4. A medic unit would have normally been included on the initial dispatch, but one was not available at the time. Engine 46, Squad 40, and Truck 12 requested to be added to the incident after becoming available from other activities. Their requests were granted by BC5.

Engine 29 was the first unit to arrive. The officer provided a Brief Initial Report, "Engine 29, 2-story, middle of group, fire showing from the rear, you can make me command."

Battalion Chief 5 arrived 25 seconds after Engine 29's report. Battalion Chief 5 requested a Working Fire dispatch for additional units and assumed Command. The Working Fire Dispatch consisted of Safety Officer 2, Truck 10, Fire Investigation Bureau, and Car 5.

Engine 29 advanced a charged, 1-¾" attack line into the dwelling from the ALPHA side first floor, front door. Following the right-hand wall, they made it to an entertainment center. There was a narrow opening that led to the rear of the dwelling, but the crew did not enter it. The attack line was found circling back to the front ALPHA side first floor window. There was no evidence that water flowed from the original attack line.
Less than 5 minutes after Engine 29 gave their initial report, the Officer transmitted a MAYDAY. Command acknowledged the MAYDAY and asked for more information. The Officer transmitted a second MAYDAY 17 seconds after the first, stating "Engine 29 MAYDAY, MAYDAY, MAYDAY, first floor" adding subsequently, "29, I can't get out."

Both members experienced catastrophic SCBA failures of their facepieces and UEBSS (buddy breather supply hoses). The failures started at 15:50 hours, less than 4 minutes after the members donned their SCBA. The members also experienced severe thermal degradation of their protective firefighting gear.

Ten firefighters directly assisted with rescue and removal of the two members, who were located 3-5 feet from the front door. Rescuing firefighters experienced "paralyzing heat" while operating inside the dwelling. The rescues were completed less than 5 1/2 minutes after the initial MAYDAY call. A Personnel Accountability Report was completed. All members on the scene were accounted for 12 minutes after the initial MAYDAY.

EMT/Firefighter Rodney Pitts was removed from the dwelling unconscious. He died on the evening of October 19, 2023, at University of Maryland's R Adams Cowley Shock Trauma Center after receiving CPR and advanced medical treatment on the scene and at the hospital. Captain Dillon Rinaldo was conscious on the scene but non-ambulatory. He died in the morning hours of October 24, 2023, while receiving treatment at the Johns Hopkins Bayview Burn Center. The manner of death for both members was classified as an accident. Three additional members from the BCFD received injuries while assisting with rescue efforts.

The fire was placed under control at 18:40 hours. A total of 13 Engines, 7 Trucks, 1 Heavy Rescue, 6 EMS Transport Units, 1 Shift Commander, 4 Fire Battalion Chiefs, 1 EMS Battalion Chief, 1 Public Information Officer, 2 Safety Officers, 2 EMS Officers, and 3 Fire Investigators responded to this incident. In addition, numerous personnel not directly involved in fire suppression came to the scene to assist members in various capacities.

The ATF concluded that the cause of the fire was UNDETERMINED, and the final classification of the incident was ACCIDENTAL.

An Incident Review Team originally comprised of 9 BCFD members and 3 career members from outside jurisdictions was formed to gather and evaluate facts surrounding the incident to determine areas of improvement for the BCFD. This team continuously consulted with 3rd party groups on Fire Modeling and Personal Protective Equipment. The team organized and evaluated the findings of fact in seven key areas. These categories recognize and expand upon the traditional NIOSH causal factors while accommodating additional, common themes that were discovered on this incident. The categories are:

- Policy
- Command & Accountability
- Communications
- Training
- Human Performance
- Staffing
- Equipment

Recommendations were color coded to indicate the IR team's perception of severity.

- Red for recommendations that should be considered Immediate.
- Yellow for recommendations that were Concerning, but not as immediate.
- Green for recommendations of previous existing items that proved to be a Strength.
- Items that started as Red or Yellow and were described as Green were corrected **AFTER** the incident but prior to the publishing of this report.

Each recommendation includes a discussion of the FACTS surrounding the incident. The FACTS also include any support for the recommendation that exists, either through published NFPA recommendations, field literature review, or best practices from other fire departments.
Each recommendation also addresses previous BCFD LODD reports that have made a similar reference.

The Incident Review Team identified a comprehensive list of 60 recommendations that were further detailed into 100 specific action items. Of these action items, 18 items were recognized as strengths that were in place prior to the incident, 44 items were identified as immediate recommendations for improvement, 38 items were identified as concerning and less immediate improvements. Of the 82 total action items identified as needing improvement, 20 items were already improved upon or corrected before the release of this report.

EXCERPTS FROM OBITUARY

Captain Dillon Rinaldo, Engine Co. 46, Detailed to Engine Co. 29

Dillon Joseph Rinaldo, born March 14, 1997, in Ridgewood, NJ. Dillon's dream of being a full-time firefighter was realized in 2017, when he was hired by the Baltimore City Fire Department. He brilliantly accomplished training and skills to be the best firefighter he could be for his brothers, sisters, and Baltimore.

Dillon was a fair, steady, and honorable leader. As his BCFD family said, he could hold a room in his hand without saying a word. Dillon listened first and was always pragmatic. He led by example and empowered those around him. He was a natural but worked hard every single day to improve.

Lt. Dillon Rinaldo, was posthumously promoted to Captain on October 24, 2023

<u>BCFD Highlights</u>

Entry Date: 7/12/2017, Class 17-03

Assigned to Engine 35: March 6, 2018

Transferred to Engine 13: October 30, 2019

Promoted to Lieutenant, Engine 46: July 6, 2022

EXCERPTS FROM OBITUARY

EMT/Firefighter Rodney W. Pitts, III Engine Co. 29

Rodney William Pitts, III was born on August 4, 1992, in Baltimore, Maryland. Rodney attended Baltimore City Public Schools and graduated from Digital Harbor High School in 2011. Rodney enrolled in the Baltimore Fire Academy on October 12, 2022, and graduated July 31, 2023. This was his dream job. He was extremely excited about achieving and accomplishing this goal.

Rodney was an old soul, with a kind and generous heart and spirit. He would selflessly do anything he could for anybody. He loved helping others and being of service. To have known Rodney was to love him. He had a smile that would light your heart and the room. He had a great sense of humor.

<u>BCFD Highlights</u>

Entry Date: October 12, 2022, Class 22-04

Assigned to Engine 29: August 22, 2023

HISTORICAL PERSPECTIVE ON DEATH IN THE BCFD

On October 19, 2023, tragedy stuck the already grieving Baltimore City Fire Department. Captain Rinaldo and EMT/FF Pitts were two incredible individuals that came from innately different backgrounds and united towards two common goals: saving lives and fighting fire. Captain Rinaldo was a generational firefighter that implanted to the Baltimore area from New Jersey when he received the call for the BCFD at the young age of 20 years old. EMT/FF Pitts was a Baltimore native who was a big brother to his classmates, calling them daily to check on them. He started his career at the mature age of 30 years old. While they were from different walks of life, they will be forever united as heroes.

The BCFD is no stranger to death for both line of duty and non-line of duty injury and illnesses for their active membership. The BCFD experienced three line of duty deaths on January 24, 2022, in a vacant structure fire with collapse at 205 South Sticker Street. While the Linden Heights report was in its final phases of review, the BCFD suffered two (2) additional, separate line of duty deaths due to medical emergencies in May of 2025. One occurred at 204 West Saratoga Street, and the other occurred during training at the Fire Academy. In the time between the Stricker Street and the release of this report, the BCFD has had a total of 14 active members die from varying injuries and illnesses including motorcycle collisions, behavioral health, and cancers. For comparison, nearby District of Columbia Fire and Emergency Medical Service Department has had 6 active member deaths in the same timeframe with a comparable total of over 2400 active members.

The BCFD was rebounding after Stricker Street, using it as an opportunity to update policies recommended by the Board of Inquiry, including city-wide vacant structure evaluations. The resilience of the BCFD was tested when the Linden Heights incident occurred. The members of the BCFD continued to show their fortitude when faced with two medical line-of-duty deaths of May 2025.

This section was not written for the immediate audience of this report, but rather for the reader that finds this report many years from now. The goal of this is to offer a historical perspective for what members in BCFD were experiencing when the Linden Heights tragedy occurred and prior to the release of this report.

INCIDENT REVIEW TEAM

The Incident Review Team (IR Team), originally composed of nine members from the BCFD and three career members from outside jurisdictions, began assembling within one week of the incident. The specific nine committee members from the BCFD are represented by one Emergency Vehicle Driver, one Lieutenant, two Captains, two Battalion Chiefs, two Deputy Chiefs, and one Civilian. The civilian team member separated in July 2024 for reasons unrelated to the investigation. The three members from other jurisdictions include one Acting Assistant Chief from Prince George's County, one Battalion Chief from Washington D.C, and one Deputy Chief from Baltimore County.

The final composition of the IR Team was set on October 30, 2023, and conducted the first meeting with Chief Wallace on November 2, 2023. Chief Wallace gave the Team instructions to focus on fact finding, determine areas of improvement, and assist the BCFD in making short-term and long-term recommendations.

In addition to finding areas of improvement, the IR Team feels it is important to recognize areas where the BCFD shows strength. The BCFD made numerous changes over the last year based on recommendations from previous Line-of-Duty Deaths, specifically Stricker Street. Many positive improvements were generated because of the Stricker Street Board of Inquiry (BOI). Some of these improvements were in place prior to the Linden Heights incident. While the IR Team attempted to recognize all areas of strength in the BCFD, the Stricker Street BOI recommendations are recognized separately due to the recency of the incident.

INCIDENT REVIEW TEAM MEMBERS

BALTIMORE CITY FIRE DEPARTMENT

Deputy Chief Mya J. McConnell, Chair
Deputy Chief Khalilah N. Yancey
Battalion Chief Harry J. Lancellotti
Battalion Chief John D. Boblits
Battalion Chief Vaughn C. Kaszak
Captain Tristan M. Tricarico
Lieutenant Jenell Taylor
Emergency Vehicle Driver Kyle Stephens

REPRESENTATIVES from SURROUNDING JURISDICTIONS & AGENCIES

Acting Assistant Chief Donald V. Fletcher, Prince George's County Fire and EMS
Deputy Chief Ken P. Hughes, Baltimore County Fire Department
Battalion Chief Robert D. Hutchins, District of Columbia Fire and EMS
Mr. Daniel Madrzykowski, Ph.D., Underwriters Laboratories, Fire Safety Research Institute

CITY OF BALTIMORE PROFILE

Baltimore, Maryland is a vibrant city with a rich history and diverse population. Situated in the Mid-Atlantic region of the United States, Baltimore is the largest city in Maryland and serves as an economic and cultural hub. As of the latest available Census date, the city has population of nearly 570,000 residents, making it the 30th most populous city in the United States. The demographics of Baltimore reflect its diversity, with a mix of Black, White, Latino, and Asian residents contributing to its dynamic cultural tapestry. The city is known for its historic neighborhoods, bustling waterfront, and iconic landmarks such as Fort McHenry and the Inner Harbor.

Geographically, Baltimore is located along the tidal portion of the Patapsco River in central Maryland, with the Chesapeake Bay to its east. The city has a total area of 92.1 square miles, of which 80.9 square miles is land and 11.3 is water. The city's terrain is characterized by a blend of urban development, waterfront areas, and green spaces, including parks and nature reserves. Its strategic location has historically made it a vital center for trade and commerce, with the Port of Baltimore being one of the busiest ports in the United States.

While Baltimore boasts many positive attributes, it also faces challenges such as urban blight and crime, vacant homes, and frequent incidents of fire-related emergencies. The city has notable history with fire, namely, The Great Baltimore Fire of 1904, which devastated large parts of the city. Since then, efforts in fire prevention, education and emergency response have been prioritized to mitigate such occurrences. The city's fire department plays a crucial role in ensuring public safety and minimizing the impact of fires on its communities, continually striving to enhance firefighting techniques and disaster preparedness measures.

BALTIMORE CITY FIRE DEPARTMENT PROFILE

OVERVIEW

The Baltimore City Fire Department (BCFD) in Maryland is a vital component of the city's emergency response infrastructure. The department consists of over 1600 dedicated members, including firefighters, paramedics, and administrative staff. The BCFD is organized into several divisions, including Fire Suppression, Emergency Medical Services (EMS), Special Operations, Fire Investigation, and Administration. Each division plays a crucial role in ensuring effective emergency response and public safety throughout the city.

The department operates on a 24/7 basis, with 39 fire stations strategically located across Baltimore to ensure timely response to emergencies. The BCFD responds to a wide range of incidents, including structure fires, medical emergencies, hazardous materials spills, and technical rescues. The frequency of responses varies depending on factors such as population density, geographic location, and time of day. The department utilizes a combination of fire engines, ladder trucks, ambulances, and specialized vehicles to handle diverse emergency situations efficiently.

In recent years, the Baltimore City Fire Department has undergone modernization efforts aimed at enhancing its capabilities and effectiveness in emergency response. This includes investments in advanced firefighting equipment, training programs, and technology integration to streamline communication and coordination among personnel. Additionally, the department actively engages with the community through fire prevention education initiatives, outreach programs, and collaborative partnerships to promote safety and resilience citywide.

STAFFING

The Baltimore City Fire Department (BCFD) has over 1600 employees, both sworn and civilian. Majority of the members, more than 1100, are assigned to Operations. The Chief of the Fire Department ultimately oversees the agency. The Executive Assistant Fire Chief is operationally the next line of command, overseeing four Assistant Chiefs. The Assistant Chief of Operations commands Field personnel (suppression and EMS). An on-duty Deputy Chief (Shift Commander) is assigned to each shift and functions as a city-wide supervisor. Seven on-duty Battalion Chiefs (six in suppression and one in EMS) and members assigned to Telestaff (department staffing) report directly to the Shift Commander.

The Shift Commander supervises the operational activities of six suppression battalions and one EMS battalion, on four shifts. Total unit complement includes 32 engines, 3 squads (rescue engines), 17 trucks, 1 heavy rescue, 2 safety officers, 1 fireboat, 1 fire rescue boat, 6 EMS district officers, 17 medic units (ALS), 12 ambulances (BLS) and various support units. The Shift Commander responds citywide on all Working Fires, additional alarms, and incidents of an unusual or serious nature (hazardous materials, building collapses, mass casualty incidents, technical rescues, dive rescues, widespread utility outages, extreme weather events, etc.), and assumes command as necessary.

All field personnel work a schedule that repeats every eight days. The work schedule for suppression is comprised of twenty-four hours on, twenty-four hours off, twenty-four hours on, five days off cycle. The work schedule for EMS is comprised of a 4-days on, 4-days-off rotation, where the first two days on are

10-hour day shifts, and the second two days are 14-hour night shifts, which are followed by four days off. Minimum staffing for engines, trucks, squads, and the rescue is four personnel per unit. Minimum on-duty staffing for the department is 308 members per shift.

AUXILIARY STAFFING

The staffing complement of Squad 40 on the incident date included the standard 4 personnel complement, plus one Auxiliary Member. The Auxiliary member program started in the early 1940's as a response to the reduction in Fire Department staffing due to World War II. Traditionally, these members have been upstanding Baltimore City residents with prestigious careers, including lawyers, business executives, business owners, clergymen, and teachers. Auxiliary members are permitted to ride apparatus and assist with exterior firefighting tasks, including hooking up to the hydrant, advancing hose lines on the outside, assisting with ladder placement, and checking for fire extension after the fire is out.

Applications for the program have been discontinued over the last 3 decades. Currently there are 3 Auxiliary members remaining. These members are not required to hold any firefighting certifications, and their presence does not count towards minimum staffing. Auxiliary personnel are not compensated and have no minimum work-hour requirements. They are issued turnout gear for thermal protection, but they are NOT allowed to enter the smoky, Immediately Dangerous to Life and Health (IDLH) environment.

BALTIMORE CITY FIRE DEPARTMENT UNIT COMPLEMENT

32 ENGINE COMPANIES

3 SQUAD COMPANIES

(RESCUE ENGINES)

17 TRUCK COMPANIES

1 HEAVY RESCUE

6 SUPPRESSION
BATTALION CHIEFS

1 SHIFT COMMANDER

(CAR-5)

6 EMS SUPERVISORS

17 ALS UNITS

(ADVANCED LIFE SUPPORT)

12 BLS UNITS

(BASIC LIFE SUPPORT)

BALTIMORE CITY FIRE DEPARTMENT UNIT COMPLEMENT

1 EMS BATTALION CHIEF

2 SAFETY OFFICERS

2 AIRFLEX UNITS

1 BRUSH UNIT

1 MCU

(MOBILE COMMAND UNIT)

1 HAZMAT UNIT

(MAJOR INCIDENTS)

1 HAZMAT SUPPORT UNIT

(MINOR INCIDENTS)

1 DECON UNIT

1 SOC TECHNICAL RESCUE
(SPECIAL OPERATIONS)

BALTIMORE CITY FIRE DEPARTMENT UNIT COMPLEMENT

1 FIREBOAT

2 FIRE-RESCUE BOATS

BALTIMORE CITY FIRE DEPARTMENT – TERMS & DEFINITIONS

"ALS"- *Advanced Life Support*. A set of life saving skills that extends beyond the basic level in the pre-hospital setting. These include but are not limited to additional medication administrations, airway interventions, and electrical therapies.

"Air-Flex" – Vehicular apparatus used to carry spare air cylinders, flood lights, and high expansion foam for emergency incidents. This vehicle also has the capability to refill personnel SCBA cylinders at incident scenes.

"Alpha" – *[Side]* Geographical area referring to the front of a structure. Usually the address side.

"Ambulance" – Term given to a Basic Life Support (BLS) EMS transport unit.

"Battalion Technician"- pilot position within the BCFD that drives and operationally supports the Battalion Chief. Their role on incidents includes accountability and incident documentation.

"BIR" – *Brief Initial Report*; Considered the initial size-up given by a unit officer on arrival at an incident. Regarding a structure fire, the BIR typically includes the location of the first arriving unit, i.e. Side Alpha, the size, type and construction of the occupancy, the conditions encountered, the initial tactical decision, a request for additional resources if necessary and finally announcing whom is in command.

"Box Area" – (29-5, an area within Engine 29's first due district) A map page corresponds to this area. Every dispatch includes the Box Area in which the incident is located. This will be the Engine number in most stations. Where only a Truck is housed, a "T" will precede the number. Ex.: T5-5

"Box Alarm" – Full box assignment. On standard structure fire responses, a full box assignment is composed of 5 Engine Companies (which may be substituted by a Squad based on proximity), 2 Truck Companies, 2 Battalion Chiefs, 1 ALS medic unit, 1 Safety Officer. In some districts Rescue 1 is also dispatched.

"Bravo" – *[Side]* Geographical area referring to the left side of a structure. This area is first in the clockwise direction from side Alpha.

"**Bump out**"- a slang, construction term used in the region to identify a 2nd story addition that is traditionally cantilevered to a room or rooms on the Charlie side of the dwelling.

"CAD" – *Computer Aided Dispatch;* refers to computer software at the Fire Communications Bureau used to assist personnel with the most efficient dispatching of units based on availability, location, and response profile.

"CAR-5" – The designation given to the on-shift Deputy Shift who functions as the Shift Commander.

"Callback" – An overtime shift occurring outside of a member's normally assigned shift.

"Charlie" – *[Side]* Geographical area referring to the rear of a structure. This area is directly opposite side Alpha.

"Code X" – Structure identified as structurally unsafe for interior firefighting operations.

"Correction" – to rectify an error

"Decon"- Decontamination. Process by which contaminates are removed. May refer to the fire department vehicular apparatus that is designed to flow water and move people through the decontamination process.

"Delta" – *[Side]* Geographical area referring to the right side of a structure. This area is the last in the clockwise direction from side Alpha.

"Detail" – A temporary assignment for a partial or full shift but at another unit. Utilized for staffing vacancies.

"Division" – A level of organization for operations with a defined geographical area.

"Emergency Traffic" – a term used to clear the radio channel for only transmissions relating to a serious condition, i.e. MAYDAY.

"Engine" – Vehicular apparatus designed to carry water and hose whose function is to extinguish fire.

"FACETS report"- document released in November 2021 by a contracted, third party: FACETS to evaluate the current state of the BCFD and make recommendations on targeting future progress.

"FCB" – Fire Communications Bureau (Call Dispatchers).

"FCB Liaison" – Fire Suppression Battalion Chief that assists Fire Dispatchers at FCB in determining unit priorities and response filtering to maximize resource deployment.

"Fire Records" – BCFD program used for NFIRS reporting. It also collects training, hydrants, building inspections, and daily events.

"FOA"- Fire Operations Aide. This command support role directly assists CAR5 by driving to incident scenes, assisting with incident documentation, and fulfilling various other administrative duties during operational and non-operational activities.

"FOCAS Lab"- *Fire Operations Command and Simulations Lab*. Practical lab for command officers to simulate incident management using computer aided technology with live radio actors

"Gemtor Harness"- specific brand of harness that is outfitted on the exterior of the turnout pants. This harness can be used by the wearer to deploy self-recue rope, or it can be used by rescuers to assist with member extrication.

"Group" – A level of organization for operations for specified functional assignments.

"IDLH" – *Immediately Dangerous to Life and Health*; refers to hazardous atmospheres that firefighters typically operate in during their duty.

BALTIMORE CITY FIRE DEPARTMENT – TERMS & DEFINITIONS *(continued)*

"IC"– *Incident Command*. The person in charge of the incident. Initially this is the OIC of the first arriving unit until relieved by a higher rank, most commonly, a Battalion Chief.

"Leadoff"- Position on Engine that is responsible for water supply at the hydrant and subsequently assists with advancing hose lines behind the officer and pipe position.

"LUNAR" – *Location, Unit, Name, Assignment, Resources Needed*; an acronym for firefighters to recall key aspects of information when they transmit a MAYDAY.

"Mayday, Mayday, Mayday!"- Reserved for the most critical of situations – a firefighter is down, trapped, missing. Dispatcher will sound the emergency traffic signal if appropriate and repeat any helpful, relevant information. All units without critical information will monitor but keep air clear for the emergency.

"Medic Unit" – Term given to an Advance Life Support (ALS) EMS transport unit.

"Mobile" – A reference to the type of radio used by personnel for communications. A mobile radio is a fixed unit inside of fire department vehicles.

"MOP"- Manual of Procedure; list of policies that identify roles and responsibilities for various operational and non-operational situations encountered by fire department members.

"OIC" – *Officer in Charge;* the officer responsible for a specific unit.

"PAR" – *Personnel Accountability Report.* An audible report given to the Incident Commander by the OIC of each unit at an incident indicating that the personnel under their command have been accounted for.

"PASS" – *Personal Alert Safety System;* An audible alert, integrated into the SCBA, which allows firefighters in distress to locate one another in environments that are visually obscured.

"PAT" – *Personnel Accountability Tag.* A picture card with a members' identifying DID (Department I.D.) number. This tag is part of the accountability system. It is placed inside the apparatus at the start of each shift by each member on that apparatus.

"PPE" – *Personal Protective Equipment;* Specialized clothing and SCBA intended to be worn by firefighters to protect them in IDLH atmospheres.

"Pipe"- Position on the Engine that is responsible for deploying and advancing the attack line, always maintaining control of the nozzle.

"Portable" – A reference to a type of radio used by personnel for communications. A portable radio not fixed to any one location and is used by fire department personnel as they navigate an incident which is worn on their person.

BALTIMORE CITY FIRE DEPARTMENT – TERMS & DEFINITIONS *(continued)*

"RIT" – *Rapid Intervention Team.* A dedicated unit of 4 personnel, initially dispatched on any box assignment, whose responsibility is to respond to the report of a Mayday at the incident. They are deployed by the Incident Commander or Operations Section Chief (if applicable).

"RITF" – *Rapid Intervention Task Force.* Additional units automatically dispatched by FCB to support the Mayday mitigation efforts. A RITF consists of 4 Engines, 2 Trucks, Rescue 1, 1 Battalion Chief (Rescue Group Supervisor), Battalion Chief EMS, 1 EMS Officer, 1 ALS Transport unit.

"SCBA" – *Self Contained Breathing Apparatus;* A breathing air source worn and carried by the user equipped with an atmosphere-supplying respirator.

"Second Alarm" – Additional resources requested above those of a Working Fire. Typically, a Second Alarm brings with it the resources an Incident Commander would have on a box assignment.

"Squad"- Vehicular apparatus designed to carry water and hose to extinguish the fire, as well as specialized rescue and vehicular extrication tools.

"Staging"- A geographical area near the incident where additional resources that have been requested, can stand by and remain ready to deploy.

"Switch to ….." or "Respond on ….." – means to set your radio to the talk-group position instructed.

"Talk-group" – A radio channel exclusively designated on the Fire Department's radio system. Example would be *Talk-group Fireground-1.*

"TIC" – *Thermal Imaging Camera;* A device in which heat signatures and infrared technology allow the user to distinguish objects in limited or no visibility environments.

"Truck" – Vehicular apparatus designed to carry a complement of ground ladders as well as an apparatus mounted larger aerial ladder.

"Under Control"- A term used to announce when a fire is mostly extinguished to the point of not requiring any additional resources.

"Urgent" – Means, "I need your attention, dispatcher, for an urgent message."

"Working Fire" – When an incident is perceived to extend past 30 mins and/or units have 2 or more hose lines in place and operating. A working fire may also be requested at any time by the Incident Commander if he/she deems the additional resources are necessary. A working fire dispatch is comprised of (1) Engine/Squad Company, (1) Truck Company, (1) Air-Flex, (1) FIB-Fire Investigation Unit and (1) Shift Commander [CAR-5]

"600 Series" – The Operational series of the BCFD Manual of Procedure.

BALTIMORE CITY FIRE DEPARTMENT INCIDENT RESPONSE POLICY

Baltimore City Fire Department policy describes the following functions for units responding to a Box Alarm based on their order of arrival:

1st Engine- Establishes water supply and reports to side ALPHA for fire suppression, transmits a brief initial report (BIR) and establishes command as the first fire department unit to arrive.

2nd Engine- Establishes separate water supply and reports to side CHARLIE, transmits a brief initial report of CHARLIE side as the first unit to arrive on that side.

3rd Engine- Rapid Intervention Team (RIT) members don full PPE, size-up the building egress concerns, gather equipment and tools, and standby on the ALPHA side ready for deployment if necessary. Deployment is determined by only the Incident Commander or Operations Section Chief (if applicable). Reasons for deployment include: a MAYDAY is transmitted, lost or missing firefighter, reported SCBA malfunction, or firefighter injured, trapped, or entangled.

4th Engine- Covers the hydrant of the first engine and the Pump Operator prepares to augment the water supply. Officer and crew report to the location of the first engine and support their operation.

5th Engine- Covers the hydrant of the second engine and the Pump Operator prepares to augment the water supply. Officer and crew report to the location of the first engine and support their operation.

1st Truck – Position on side ALPHA of building. Place aerial ladder and portable ladders on the ALPHA side and DELTA exposure. Ventilate, force entry, conduct search of fire floor and upper floors (where applicable) and search for hidden fire with engine companies.

2nd Truck- Position on CHARLIE side of building. Place aerial ladder and portable ladders on side CHARLIE and the BRAVO exposure. Ventilate, force entry, conduct searches of the 1st floor and basement (where applicable), and shut off utilities.

1st Battalion Chief- Report arrival on scene and assume command, reporting command post location. Transmit a size-up within 5 minutes of arrival and continue with status reports at 10-minute intervals until the fire is under control.

2nd Battalion Chief- Assumes CHARLIE Division Supervisor.

Safety Officer- Assumes Incident Safety.

Medic Unit- Reports to Incident Commander on side ALPHA with full PPE, stretcher and medical equipment and prepare to administer medical care as needed.

The information above is a summarized compilation of related BCFD Manual of Procedures (MOPs) that have been amended with Operational Memos, as resources have changed since 2022 (MOP 602, 602-1, 602-2, 808-5, Ops Memo 15-22, 16-22 [revised]).

REPORT METHODOLOGY

The Incident Review Team (IR Team), composed of nine members from the BCFD and three career members from outside jurisdictions, began assembling within one week of the incident. The specific nine committee members from the BCFD are represented by one Emergency Vehicle Driver, one Lieutenant, two Captains, two Battalion Chiefs, two Deputy Chief, and one Civilian. The three members from other jurisdictions include one Acting Assistant Chief from Prince George's County, one Battalion Chief from Washington D.C, and one Deputy Chief from Baltimore County.

The final composition of the IR Team was set on October 30, 2023, and conducted the first meeting with Chief Wallace on November 2, 2023. Chief Wallace gave the Team instructions to focus on fact finding, determine areas of improvement, and assist the BCFD in making short-term and long-term recommendations.

In addition to finding areas of improvement, the IR Team feels it is important to recognize areas where the BCFD shows strength. The BCFD made numerous changes over the last year based on recommendations from previous Line-of-Duty Deaths, specifically Stricker Street. Many positive improvements were generated because of the Stricker Street Board of Inquiry (BOI). Some of these improvements were in place prior to the Linden Heights incident. While the IR Team attempted to recognize all areas of strength in the BCFD, the Stricker Street BOI recommendations are recognized separately due to the recency of the incident.

SOURCE DATA

The IR Team gathered data from multiple sources to summarize and evaluate the incident. Information reviewed included:

- Department Policies- Manual of Procedures, Operations Memos, Bulletins, Training Manual, etc.
- Scene visits with photographs.
- Videos recorded of the incident- police body worn cameras, social media, member footage.
- Written statements from personnel who responded to the incident.
- Personnel interview panels.
- Apparatus pump data recorder.
- Recorded fireground communication audio.
- ATF origin and cause investigation.
- Departmental staffing records.
- Member training records.
- Official NFIRS incident report.
- Computer-aided dispatch (CAD) data.
- Draeger PSS 7000 Self-Contained Breathing Apparatus (SCBA)- unit photos, data, and testing.
- Personal Protective Equipment (PPE): including turnout coat, pants, helmet, hood, gloves.
- Third-Party evaluation of SCBA and PPE.
- Bayview Burn Center medical expert testimony.
- Medical Examiner Reports.

INTERVIEWS

The personnel interview panels were conducted with the entire IR Team and two (2) NIOSH investigators present. This reduced the number of interview panels for our members to complete. Maryland Department of Occupational Safety and Health (MOSH) and Alcohol, Tobacco, and Firearms (ATF) personnel also required interviews from most members that first responded to the incident. To limit the psychological impact to members, these 3 sets of interviews were conducted on the same day. Union representation, Peer Support and Critical Incident Stress Management staff members were on scene for the duration of the process.

Interviews with the IR Team and NIOSH were not recorded. Documentation was conducted with hand-written notes. This method was disclosed at the beginning of every interview. The intent of this method was to promote members' honesty and limit fear of disciplinary actions for providing the truth. Accuracy of statements was verified by cross-referencing the handwritten notes of the IR Team.

REPORT ORGANIZATION

The IR Team worked hard to organize the data that was gathered into a logical and methodical report. The subsequent sections of this report attempt to provide the background information to offer a complete explanation of why the specific recommendations were made, and where they came from on this incident. Throughout the report, when a particular fact ties to a strength or recommendation finding, it is marked with a color-coded Finding section and number. This refers to the exact item in the FINDINGS section that relates to that fact.

FALLABILITY OF MEMORY

While every effort was made to corroborate members' interviews with concrete digital evidence, there were accounts where this was not possible. The IR Team recognized a fallibility of memory exists as humans are expected to recall events "while subjected to operational and emotional stress," as was the case for this incident (Leadership Under Fire, 2022). While it is the goal of the IR Team to remain objective in reporting and presenting only the facts, the fallibility of memory is an inevitable limitation of this report. To further resolve the conflict between subjective memory and objective facts, the IR Team asserts that no recommendations were made using unverified members' accounts as the sole evidence for the basis of the finding.

Reference:

Leadership Under Fire, 2022, *A Human Factors Review of NIOSH Fire Fighter Fatality Investigation and Prevention Program Reporting.* Accessed at*:* LUF-NIOSH-LODD-Point-Paper-July-2022-2.pdf

ADDITIONAL REPORTS

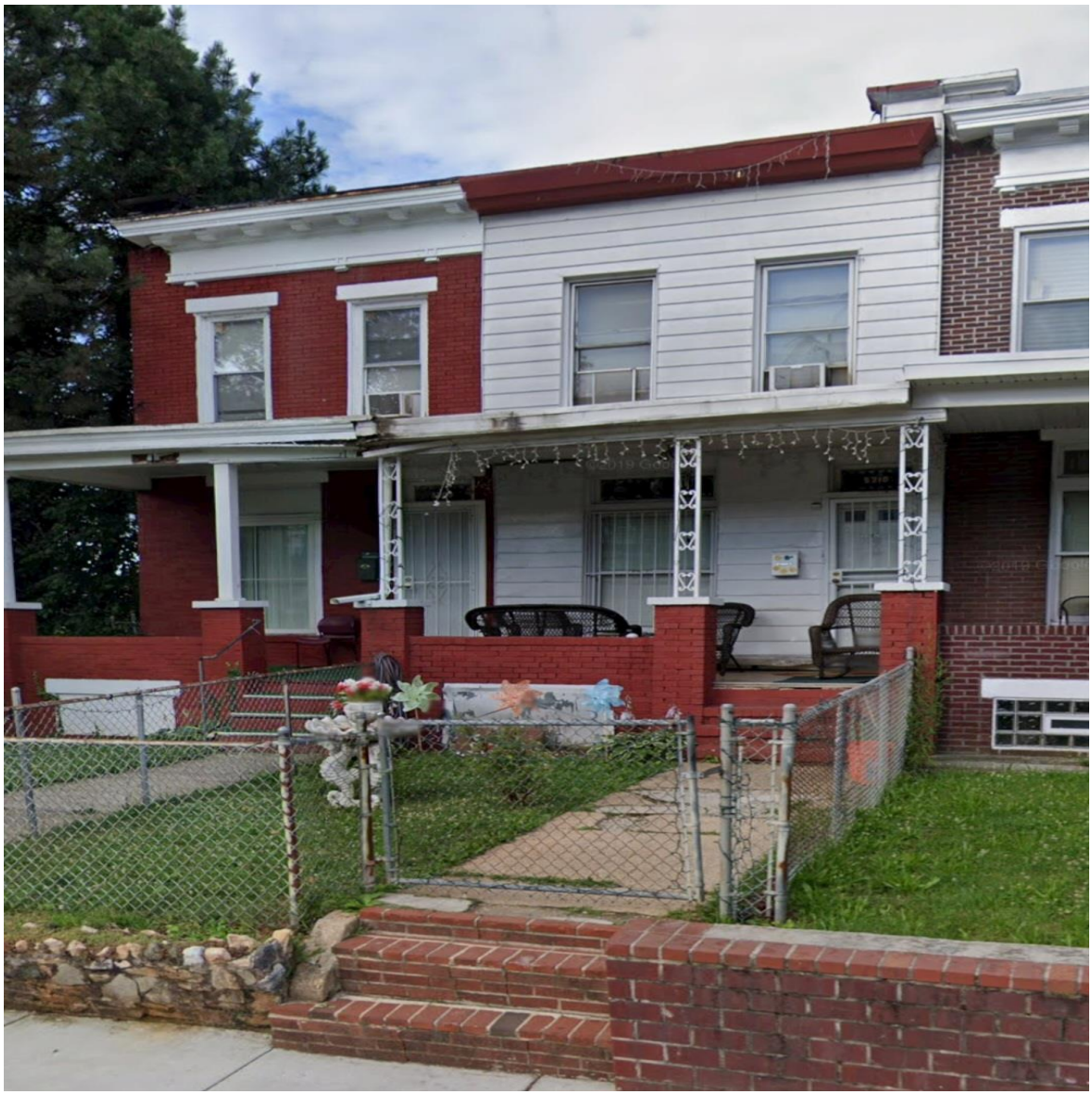
The National Institute of Occupational Safety and Health (NIOSH) conducted a separate investigation concurrent with the IR Team. That investigation was released in March 2025. The interview information and various facts were shared amongst the IR Team and NIOSH throughout the investigation process. NIOSH reports have a local and national audience. The IR Team's audience is specific to the BCFD and the City of Baltimore. For this reason, the final recommendations for the two reports will presumably vary.

Maryland Occupational Safety and Health (MOSH) also conducted a separate investigation. MOSH informed the BCFD in March 2024 that they were not citing any violations or pursuing any fines resultant to this incident. While MOSH conducted a separate investigation, it has not been shared with the IR Team as of the publishing of this report.

The Bureau of Alcohol, Tobacco, Explosives and Firearms (ATF) investigated fire cause and classification for this incident. Their findings are cited in the corresponding section. The findings in their report were shared with the IR Team. The ATF also contributed numerous photos and video still shots to enhance this report.

BUILDING HISTORY AND CONSTRUCTION

The structure at 5210 Linden Heights Avenue, as well as the other adjacent dwellings on the block, was constructed in November of 1901 in the Woodmere neighborhood of North-West Baltimore. These dwellings were built utilizing a standard construction method for that era with the primary framing and structure built with wood components and having an exterior finish of brick and mortar. Plaster and lath covered the interior walls and ceilings, along with cosmetic coverings of wood paneling. Masonry block formed the foundation walls that enclosed the below grade basement.



*(**Photo 1**: front street view of 5208 {left}, 5210 {middle} and 5212 {right} of Linden Heights Ave prior to the incident. Photo circa 2021, Google Maps)*

5210 Linden Heights is 1,788 square feet. The original dwelling dimensions were 13 feet wide by 40 feet in length. An addition to the first floor was added later ***(photo 2)*** which increased the length of the dwelling by 15.6 feet and a had nominal width of 11.6 feet.

*(**Photo 2**: Pre-fire aerial view of the incident location. Sides of the structure denoted by yellow boxes)*

In historic Baltimore fashion, these homes are adjoined to each other with brick rows. Homes were constructed together as a row of dwellings that spanned a specific plat of land. This is otherwise known as a "*block*." These were typically built with the same length and width home to home. Over the course of a rowhome's lifespan, many homeowners chose to extend their home's length by way of an addition. These additions take either the form of a one room extension on the first floor, typically ground level to the rear outside or in the form of a 2nd floor cantilevered extension known in the area as a "*bump out*." ***(Photos 3 & 4)***.

*(**Photo 3**: "bump out" example on the rear of the adjacent [corner dwelling] 5208 Linden Heights Ave. [Bravo Exposure]*

*(**Photo 4**:)*

a. *5210 Linden Heights with 1st floor addition, pre-incident photo*
b. *5208 Linden Heights, corner dwelling, pre-incident photo. Image shows the 2nd floor "bump out"*

5210 Linden Heights had undergone several renovations over the course of its lifetime. At some point this location had a deck built onto the rear of the dwelling. ***(Photo 5)*** Circa 2002, this deck was enclosed creating a "room addition" off the rear of the structure. This was done with 4x4 posts, 2x4 studs and 2x8 joists at the nominal size for the era. The addition was constructed over top of the side Charlie exterior basement stairwell rendering the stairwell unusable. A permit was obtained prior to the work being performed. Also of note is the ledger board that previously served as a structural component for the deck. It was not completely attached to the dwelling leaving a void between it and the rear brick wall.

The structure also had the primary incoming electrical service cable replaced sometime between 2016 and 2017. This electrical upgrade in service line size was a short time after the neighboring dwelling of 5208 had its service upgraded from 100 to 200 amps. The electrical service drop was attached to side Bravo of the second floor "bump out". The service entrance cable split at this location to provide service to both 5208 and 5210 Linden Heights respectively.

The exterior of the structure had aluminum siding over brick. The front and rear of the structure (Alpha and Charlie sides) were composed of brick at a thickness of 2 wythes for both the first and second floors. The left and right-side walls (Bravo and Delta sides) were party walls shared by the adjacent dwellings. The second floor "bump out" on side Charlie was sheathed with a combination of wood siding, vinyl siding and asbestos shingles.

*(**Photo 5**: 5210 Linden Heights deck joists and ledger board from previous deck construction that served as a base upon which the addition was built.*

Note the joist hangers still attached to the ledger.

This was considered a "deck enclosure."

The interior layout of all the structures in this block were identical in construction. A living room occupied the first-floor front area situated to the left of the front entry door. A vertical post beam separating this room from the next prior to the stairwell was originally constructed in all the dwellings. (***Photo 6***) This vertical post served as the right-hand support for the horizontal ceiling bulkhead that spanned the width of the room. The bulkhead was supported on the left side with vertical structure integrated into the wall at approximately 2 feet in width. Additionally, upon entry to these dwellings, a left-hand wall was present immediately past the doorway. This served to provide a divider between the entry hallway and the living room.

5210 Linden Heights had neither the vertical post nor the left-hand divider wall in place at the time of the fire. At an unknown time, these two components were removed in lieu of having a more open floor plan to the room. The left side support for the horizontal ceiling bulkhead and the bulkhead itself remained as the separator between the living room and dining room areas. The interior finishes were constructed with either wood paneling or plaster and lath. Suspended ceiling components were present on both the first and second floors. Where no suspended ceiling was present, plaster and lath was the material in use as a covering. Flooring was carpet over hardwood.

*(**Photo 6**: Original style of interior construction for homes in the 5200 block of Linden Heights Ave) Photo courtesy of MLS -Multiple Listing Service*

a. Component in originally built structures that was not present at the incident address.

WEATHER

On the afternoon of October 19, 2023, a general description of the weather would be characterized as a nice day. Between 1500 and 1600 hours the temperature was approximately 70 °F with a light wind generally from the south. The relative humidity was below 60% and no precipitation. Weather data was collected from five different weather stations: BWI Thurgood Marshall Airport, approximately 11 miles S; Roland Park Library, approximately 2.7 miles ENE; Liberty Grace Church, approximately 1.1 miles S; Johns Hopkins University Homewood Campus, approximately 3.3 miles E; and North Roland Park approximately 3.4 miles NNE.

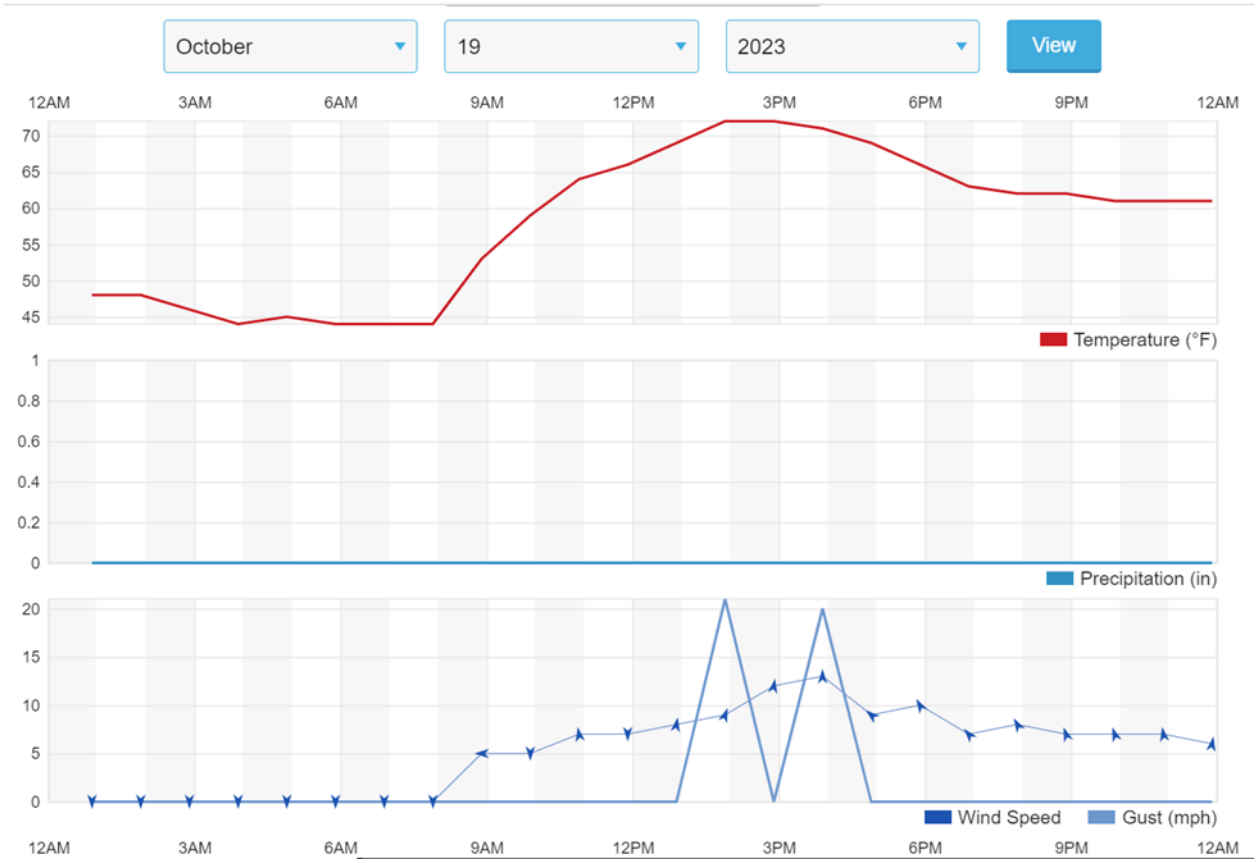
The weather data available from these sites provided hourly readings. For this fire analysis the focus was on temperature, wind speed, wind direction, and wind gusts. The data presented in the table below covers the time between 1500 and 1600 hours.

Station and Location Relative to 5210 Linden Heights Avenue Temperature (° F) Wind Speed (mph) Wind Direction (blowing from) Wind Gusts (mph)

Station and Location Relative to 5210 Linden Heights Avenue	Temperature (° F)		Wind Speed (mph)		Wind Direction (blowing from)		Wind Gusts (mph)	
	1500 hours	1600 hours	1500 hours	1600 hours	1500 hours	1600 hours	1500 hours	1600 hours
BWI 11 miles S	71	70	12	10	S	SE	0 to 20 (peak at 1454)	0
Roland Park 2.7 miles ENE	69	69	1 to 2	1 to 2	S	SE	NA	NA
Liberty Grace 1.1 miles S	72	68	0 to 14	0 to 9.6	S	SE	0 to 21	0 to 21
JHU – Homewood 3.3 miles E	71	69	0 to 18	0 to 9	S	SSW	0 to 25	0 to 16
North Roland Park 3.4 miles NNE	68	66	0 to 11	0 to 9	ESE	S	0 to 16	0 to 12

In addition to the hourly readings, BWI Thurgood Marshall Airport provided a daily history of the weather conditions as shown below. From this data set we can see that the peak temperature, wind speed, and wind gusts occurred about an hour before the fire incident. While this weather station was more distant from the fire scene than some of the other weather stations, BWI Thurgood Marshall Airport's station was not obstructed or influenced by surrounding buildings and it was well maintained. This data provided a better basis for assessment than the closer weather stations.

Weather data from BWI Thurgood Marshall Airport for October 19, 2023:



PRE-INCIDENT PLANNING

On October 18th, 2023, the day before the incident, the crew of Engine 46 conducted Code X Sweeps as part of a required, weekly evaluation of vacant structures per MOP 610-5 [**Policy #13**]. One of the blocks they visited in the 2-hour period was the 5200 block of Linden Heights Avenue. Captain Rinaldo was the Officer. He documented 3 vacant properties on that block and entered the findings into FIRE-RECORDS upon returning to the station. One of the vacant properties was 5214 Linden Heights Avenue, 2 houses away from where this fatal fire occurred.

CREW DYNAMICS

On the date of the incident, the crew of Engine 29 did not consist of members that normally work together. The officer of the unit, Captain Rinaldo, was working a trade-of-shift, away from his normal assignment and crew at Engine 46. The Pump Operator was working an overtime shift at his normal assigned unit. The Pipe and Lead Off members were at their normal assigned unit and shift. EMT/FF Pitts was still wearing a yellow helmet, which signifies a member that is still in their probationary period [**Staffing #2**]. Captain Rinaldo would have been aware of EMT/FF Pitts' limited experience based on this, but he would not have been privy to any crew member's general strengths or limitations after only a few hours of interaction.

INITIAL INCIDENT INFORMATION

On October 19, 2023, at 15:29 hours, a contractor working at the vacant property at 5208 Linden Heights Avenue was in the rear of the structure taking a video of repair work he completed as required by his employer. No smoke, flames or evidence of fire was noted in the video. Shortly after completing this task, at 15:33 hours, he noticed a small fire in a hole of the exterior wall at the floor level of the first-floor rear addition/enclosed porch of 5210 Linden Heights Avenue. ***(Photo 7)***

*(**Photo 7**: Fire venting from the exterior wall of the first-floor rear addition of 5210 Linden Heights Avenue, adjacent to 5208 Linden Heights Avenue where contractor was working.)*

The first 911 call was received 6 minutes later at 15:39 hours. This is the view from a home doorbell camera while that phone call was being made. ***(Photo 8)***

*(**Photo 8**: Ring Camera still shot from the rear at 15:42 hours showing column while units are enroute.)*

Multiple 911 calls were made, with eight (8) total being processed for this same incident. Two of the calls were from the occupant's residential fire alarm monitoring company. The alarm company first reported an upstairs smoke alarm activation at 15:43 hours, two minutes after the incident was dispatched. Next, at 15:46 hours they reported smoke alarms from the upstairs, first floor living room, and basement all sounding. Half of the first alarm assignment was already on scene by this time.

By the time the incident was dispatched, the plume of smoke could be seen from miles away.

*(**Photo 9**: View traveling north on Garrison Avenue while units were enroute. Photo courtesy of Jason Watson-Dorsey.)*

INITIAL DISPATCH INFORMATION

A standard 1st ALARM was dispatched at 15:41 hours with the following information:

> *"Box Alarm 46-40 units respond on Fireground 1, Fireground 1, Engine 29, Engine 45, Engine 52 as the RIT, Engine 20, Engine 44, Truck 25, Truck 16, Battalion Chief 5, Battalion Chief 3, Safety Officer 4 respond, 5210 Linden Heights Avenue, between West Belvedere Avenue and Dead End, report of a Dwelling Fire."*
>
> *Dispatch information was repeated one time.*

A standard 1st Alarm (Box) consists of 5 Engines with the 3rd Engine responding as the Rapid Intervention Team (RIT), 2 Trucks, 2 Battalion Chiefs, 1 Safety Officer and 1 Medic unit.

When this incident occurred a Medic Unit was unavailable, so one was not included in the initial dispatch (MOP 515-11). There were Basic Life Support (BLS) EMS Units available, but policy dictates to not utilize those units for this incident type [**Communications #6**].

All five (5) engines and two (2) trucks that were dispatched on this incident were outside the normal first alarm assignment for this address. Three of the engines would have been on the incident, but not in the exact order as dispatched. This occurred because units that, under normal conditions would have been dispatched, were unavailable for various reasons. Squad 40 and Truck 12 were on other responses [**Policy #2**]. Truck 18 was placed on a non-emergency lift-assist just prior to this dispatch [**Policy #2**]. Truck 27 was at the Apparatus Coordinator's Office in East Baltimore on Pulaski Highway for a cosmetic update to the unit [**Communications #1**].

The Medic Unit that would be first to respond to this incident was not available due to being on another response.

Chart 1 below displays the actual dispatched units compared to the ideal units that would have been selected if all units were available to respond from their fire station:

(Chart 1: Dispatched units vs. Ideal unit selection when all are available)

Engines		Trucks		Medic		Battalion Chief		Safety Officer	
Actual	When All Available	Actual	When All Available	Actual	When All Available	Actual	When All Available	Actual	When All Available
E29	E46	T25	T27	None	M17	BC5	BC5	SO4	SO4
E45	E29	T16	T12			BC3	BC3		
E52	S40								
E20	E45								
E44	E52								

DESCRIPTION OF SIGNIFICANT EVENTS

ENROUTE

Before the initial dispatch was complete, Squad 40 requested to be added to the response, giving their current location of Rogers Avenue and Liberty Heights Avenue on the designated Fireground Channel. They made this request twice, 30 seconds apart, at 15:41 hours and 15:42 hours with no response. At 15:42 Engine 46 made a similar request to be added to the box from Reisterstown Road and Druid Park Drive. Battalion Chief 5 approved Engine 46's request. Squad 40 made their request a third time and was approved to respond by BC5. BC5 did not cancel any engines on the initial response, meaning 7 engines were now enroute. Due to the extra engines, BC5 advised units at 15:44 hours to "fall in on the box where you belong" and "cover plugs (hydrants) if necessary".

While units were enroute at 15:43 hours, FCB updated that they were also receiving calls for 5208 Reisterstown Road, which is a tire shop. BC5 acknowledged and stated, "there is a large plume of smoke in that area."

FIRST ARRIVING UNIT

Engine 29 was the first unit to arrive. Captain Rinaldo was the OIC and EMT/FF Pitts was riding in the PIPE position. Captain Rinaldo called in a hydrant at Belvedere and Liberty Heights at 15:44 hours. The member riding in the Leadoff position remained at the hydrant to make the connection.

Forty-five (45) seconds after Engine 29's transmission, Squad 40 arrives and announces they are covering Engine 29's hydrant. Squad 40 was the second arriving engine. Despite not being on the initial assignment and being the 7th engine added because they were clearing an EMS response very close by, Squad 40 did not report to the rear as expected of the 2nd arriving engine. Instead, they covered Engine 29's hydrant which is the 4th engine's responsibility. This task was later assumed by Engine 20 when Squad 40 moved their unit to make room for the truck.

Forty (40) seconds after calling in the hydrant at 15:44 hours, Captain Rinaldo transmitted his Brief Initial Report (BIR) "Engine 29, 2-story, middle of group, fire showing from the rear, you can make me command." This report was given from the fixed, mobile radio on the unit. When Communications repeats this report, they incorrectly refer to Engine 29 as Squad 40.

FIRST ARRIVING BATTALION CHIEF

BC5 arrives at 15:45 hours, 25 seconds after Engine 29's BIR. He requests a Working Fire Assignment with unit staging at Belvedere and Linden Heights.

Car 5 went enroute verbally on Fireground 1 at 15:45 hours. This verbal transmission caused 2 mobile transmissions from Engine 52 to be rejected [**Communications #2**].

At 15:46 hours Engine 52 calls on scene as RIT.

At 15:46 hours Airflex 1 calls enroute verbally on Fireground 1 [**Communications #2**].

Communications dispatched a Working Fire at 15:47 hours with the following information:

> *"Working Fire Box 46-40, units respond on Fireground 1, Fireground 1. Safety Officer 2, Truck 10, Car 5, FIB respond 5210 Linden Heights Avenue for the Dwelling Operations Fireground 1."*
>
> *Dispatch information was repeated one time. On the repeat, the dispatcher added "Stage at Belvedere and Linden Heights, staging area is Belvedere and Linden Heights, Operations Fireground" 1."*

The Working Fire dispatch was missing units according to the policy (MOP 515-11). One engine and Rescue 1 were not included. The Airflex was also left out, but that was because they already went enroute. The engine was not dispatched because Engine 46 was already considered as the additional engine. When this happens the CAD program only recommends the balance remaining. Rescue 1 was not dispatched because they were out of service for training.

At 15:47 hours BC5 assumes command with the command post on the ALPHA side, reporting "2 story porch front second from the end, we got heavy fire in the rear with extension, corrected address 5210 Linden Heights".

Truck 12 requests to be added to the box after clearing a medic run on Garrison Avenue. The IC approves and states "when you arrive, I need you to get into 5212." Truck 12 acknowledges. Then command states "If you don't arrive first. Right now, I don't have a truck on the scene."

Chart 2 below shows the actual arrival order of the initial assignment highlighted in **YELLOW** which was dispatched at 15:41 hours. The additional units either requested to be added because they became available for service shortly after the initial dispatch or were part of the working fire (WF).

(Chart 2: Dispatched assignment vs. Actual arrival order)

	1st Engine	2nd Engine	3rd (RIT) Engine	4th Engine	5th Engine	Extra Engine	Extra Engine	1st Truck	2nd Truck	W/F Truck	Extra Truck
Dispatch As	**E29**	**E45**	**E52**	**E20**	**E44**	**E46**	**S40**	**T25**	**T16**	**T10**	**T12**
Arrival Order	**E29**	**S40**	**E46**	**E20** (estimate)	**E52**	**E45**	**E44**	-	-	-	-

INITIAL ATTACK

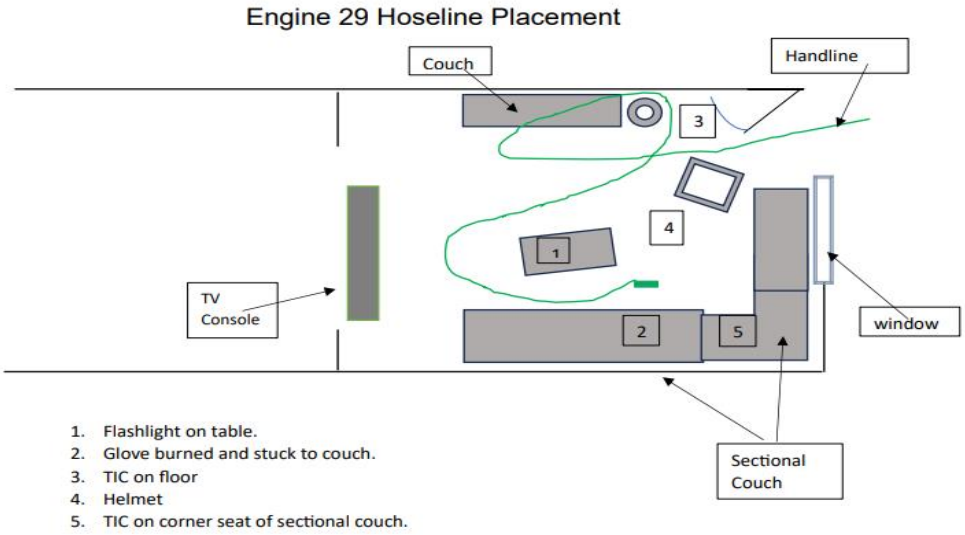
Engine 29 selected a 250 foot 1 ¾" cross-lay handline to make an interior attack on the fire at 15:45 hours and began deployment.

At 15:48 hours, three minutes after taking command, the IC states "Command to 29, you reach the back of that dwelling yet?" The fire conditions of the dwelling at that time are shown in photo 10.

Engine 29 does not respond. There is no indication from apparatus data recordings or any other evidence that Engine 29's initial attack line flowed water at any point. [**Training #1, #6**].

*(**Photo 10**: Fire conditions at 15:48 hours when Command is asking Engine 29 for an update.)*

Engine 29's hose-line placement is shown in [***figure 1***]. After the crew entered the structure with EMT/FF Pitts in the lead and Captain Rinaldo following just behind, EMT/FF Pitts followed the right-hand wall. The crew missed the narrow opening leading to the rear dining room and kitchen, instead circling along the front living room furniture and back towards the front window. ***(See also figure 1)***



*(**Figure 1**: Engine 29 Hose-line Placement)*

Also, at 15:48 hours, the IC orders Engine 46 to knock down the exterior fire. Then he specifically tells Engine 46 that "29 is in the 2nd from the end, I want you to stop it at the 3rd from the end." This is to prevent further fire spread, while accounting for the safety of interior crews [**Training #9**].

MAYDAY

Forty-three (43) seconds after command calls Engine 29 to find their location, a MAYDAY is transmitted by Captain Rinaldo. When the MAYDAY is called at 15:49 hours, Captain Rinaldo states "Engine 46, MAYDAY, MAYDAY, MAYDAY." The member is normally assigned to Engine 46 but was working at Engine 29 that day shift [**Human Performance #3**]. The transmission is clear and calm, but it is not detailed so the reason for the MAYDAY is unclear.

WBAL Channel 11 News broke in on the air with live helicopter footage of the dwelling fire at approximately 15:49 hours. Their footage shows the heavily involved rear of the dwelling with the extension into both exposures. At some point within this timestamp, roughly 15:49:17 to 15:49:18, the initial MAYDAY was transmitted. ***(Photo 11)***

*(**Photo 11**: WBAL News, live aerial coverage at the approximate time the Mayday was declared)*

The IC immediately acknowledges the MAYDAY, stating "Command to all units a MAYDAY has been declared - unit calling the MAYDAY go ahead." Captain Rinaldo has another rejected transmission, but 17 seconds after the initial MAYDAY he is then able to transmit "Engine 29 MAYDAY, MAYDAY, MAYDAY, first floor". Another 17 seconds later he tells the IC "29, I can't get out" [**Policy #4**].

Baltimore City Police Department body-worn camera's still-shot was obtained showing the fire involvement on Side Alpha. At timestamp 15:50:33, it is approximately 1 minute, 21 seconds after the Mayday, that the BCPD body cam captured the image. ***(Photo 12)***

*(**Photo 12**: BCPD body worn camera image capture. Side Alpha)*

Both members experienced catastrophic SCBA failures of their facepiece and Buddy Breather supply hose [**Equipment #5**]. The failures occurred at 15:50 hours, less than 4 minutes after the members donned their SCBA.

Captain Rinaldo experienced a loss of air supply around the time he called the MAYDAY. Just afterwards, both EMT/FF Pitts' and Captain Rinaldo's SCBA systems experienced a massive leak, rapidly depleting their air supply. It is unclear if the facepiece or the Buddy Breather hose was the initial cause for the leak, as both were found significantly damaged. This is the moment when Captain Rinaldo called the 2nd MAYDAY. Both members' air supply depleted within 2 minutes of the hose failure, reaching zero just before 15:52 hours, EMT/FF Pitts did not make any successful radio transmissions.

EMT/FF Pitts had 11 rejected radio transmissions in the 45 seconds after the MAYDAYs were called [**Training #3**]. His portable radio microphone cable was found burned through and the microphone assembly completely disconnected from the radio [**Equipment #10**].

*(**Photo 13**: Additional image of E-29's handline position. Photo taken from the C/D corner of the living room facing the front porch window. E-29's first-in handline depicted in red.)*

COMMAND RESPONSE TO MAYDAY

At 1550 hours the IC calls for additional resources and controls radio traffic, "Command to communications, I need you to dispatch a RIT task force, a MAYDAY has been declared. Command to all units, emergency traffic only on the radio" [**Command & Accountability #1**]. At this same time, Squad 40 is the first unit to apply water from the Alpha side of the dwelling, using a 1 ¾" cross-lay.

Communications dispatches the Rapid Intervention Task Force (RITF) at 15:51 hours with the following information:

> *"Rapid Intervention Task Force Respond on MAYDAY box alarm 46-40 Operations Fireground 1, 5210 Linden Heights Avenue for the MAYDAY.*
>
> *Rapid Intervention Task Force Respond on MAYDAY box alarm 46-40 Operations Fireground 1, 5210 Linden Heights Avenue for the MAYDAY.*
>
> *Engine 21, Engine 13, Engine 8, Engine 30, Engine 43, Truck 8, Truck 1, Medic 15, Battalion Chief 3, Battalion Chief 6, Safety Officer 2, Engine 4, Truck 5, Air-flex 1, FIB respond."*
>
> (15:51)

The dispatch does not identify the first engine on the RITF to replace the RIT team as required by MOP 602-8 **[Communications #3]**.

Battalion Chief 3 arrives just as the MAYDAY is transmitted and reports to the rear of the dwelling. He gives the first report of conditions on the Charlie side. "We have heavy fire on 3 dwellings, we're starting to put water on it now, do you have the location of the MAYDAY?"

As the RITF is being dispatched at 15:51 hours, command calls for a 2nd Alarm.

Communications dispatches the 2nd alarm with the following information:

> *"Second Alarm of Fire box 46-40 units respond on Fireground 1, Battalion Chief 2, EMS 5, PIO respond for the second alarm of fire MAYDAY declared operations on Fireground 1."*

The 2nd Alarm did not have the expected response profile according to MOP 515-11. Like the Working Fire dispatch discrepancy, this is because the CAD will give the balance of units based on what has already been dispatched.

RESCUE EFFORTS

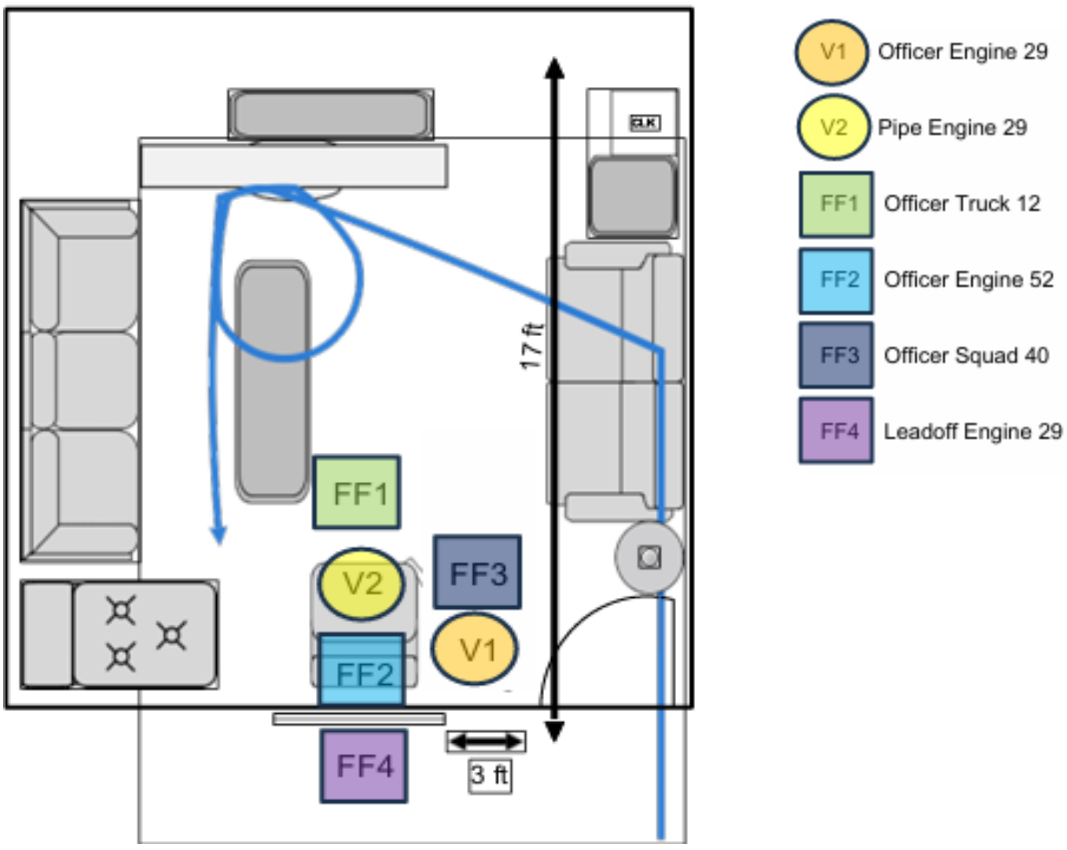
Engine 52 was the RIT unit for this incident. All 4 members donned their PPE and reported to the Alpha side before the MAYDAY was called. They did not initially have a RIT bag **[Equipment #1]** When the MAYDAY was called, two members of Engine 52 raised a ladder to the porch roof because they thought the MAYDAY was on the second floor **[Human Performance #3]** Shortly after, they realized it was on the first floor and relocated. Three members achieved the objective of rescuing the two members from

Engine 29 with the assistance of other units while the 4th member suppressed the fire with a handline from the porch.

The members of Squad 40 operating on the Alpha side, deployed a second 1 ¾" handline when the MAYDAY was called. They started to assist with the MAYDAY and could see EMT/FF Pitts from the window. One member of Squad 40 transmitted a third MAYDAY on behalf of the members inside due to the security bars on the window. They assisted with removing both members from Engine 29 [**Policy #2**].

The Leadoff member from Engine 29 was helping move hose at the front door when the MAYDAY was called. He assisted by flowing water from Squad 40's line and then aided in the removal of EMT/FF Pitts. The Pump Operator from Engine 29 ensured sufficient water supply and provided equipment as requested.

(***Figure 2***: *Rescue Efforts- Member Location(s))*



Truck 25 was the first assigned truck. They arrived at 15:48 hours but their apparatus was blocked by other units from accessing the front of the building. They heard the MAYDAY just as they arrived. Truck 25's Tillerman assisted with caring for Captain Rinaldo after he was already removed. The other three members raised ladders and went to the roof on the Delta side **[Human Performance #4]**

Truck 12 arrived at 15:49 hours. They were also blocked from accessing the building. They heard the MAYDAY right as they arrived. Truck 12's Officer ran to the Alpha side and immediately removed the security bars. [**Human Performance #2**]. He could see EMT/FF Pitts just inside the window.

Truck 12's Officer reported "I got the bars off the window; I got members down just inside" at 15:52 hours. He assisted members from Squad 40 with removing EMT/FF Pitts. Another member from Truck 12 assisted with treatment of Captain Rinaldo after he was removed and before the medic arrived.

Truck 16 arrived at 15:49 hours on the Charlie side in an adjacent car lot separated by a chain-link fence. The Officer of Truck 16 ran to side Alpha to assist with the MAYDAY while his crew remained on side Charlie. The officer of Truck 16 assisted with removing EMT/FF Pitts.

Captain Rinaldo was removed from the dwelling at 15:52 hours.

EMT/FF Pitts was removed at 15:54 hours.

A PAR was conducted at 15:57 hours for all first alarms units and the additional units added to the assignment before the MAYDAY was declared.

A total of 10 Firefighters directly assisted with the rescue of Captain Rinaldo and EMT/FF Pitts from IDLH environment [**Policy #5**]. Multiple members that entered the interior of the structure during the RESCUE EFFORTS reported experiencing extreme, paralyzing heat. For some, it was the hottest fire of their lives. It took under 6 minutes after the MAYDAY was called to remove both members from IDLH environment [**Equipment #6**]. All members assisting with the RESCUE EFFORTS were either on the initial alarm or added at the approval of the IC prior to the MAYDAY being declared [**Policy #2**].

FINAL OUTCOME

The fire was placed under control at 18:40 hours. A total of 13 Engines, 7 Trucks, 1 Heavy Rescue, 6 EMS Transport Units, 1 Shift Commander, 4 Fire Battalion Chiefs, 1 EMS Battalion Chief, 1 Public Information Officer, 2 Safety Officers, 2 EMS Officers, and 3 Fire Investigators responded to this incident. In addition, numerous personnel not directly involved in fire suppression came to the scene to assist members in various capacities.

A total of 5 BCFD members were transported to area hospitals for injuries. Three members received minor injuries resulting from the rescue efforts of EMT/FF Pitts and Captain Rinaldo.

EMT/FF Pitts received CPR immediately upon removal from the building. CPR continued while the member was moved to the medic unit. Medic 11 and EMS 5 provided ALS treatment for EMT/FF Pitts while he was transported to University of Maryland's R Adams Cowley Shock Trauma Center at 16:11 hours. EMT/FF Pitts was pronounced dead by hospital staff on October 19, 2023. In an Office of the Chief Medical Examiner (OCME) report dated January 29, 2024, it was determined that EMT/FF Pitts died of smoke inhalation and thermal injuries. The manner of the death was classified as an accident.

Captain Rinaldo was conscious and alert upon removal, but not ambulatory. He was verbally expressing concern for EMT/FF Pitts during his treatment on scene. He received ALS care enroute to the hospital. Medic 15 transported Captain Rinaldo to University of Maryland's R Adams Cowley Shock Trauma Center at 16:05 hours. After receiving initial treatment at Shock Trauma, Captain Rinaldo was transferred to Johns Hopkins Bayview Medical Center Burn Center on the evening of October 19, 2023. He later succumbed to his injuries in the overnight hours of October 24, 2023. In an Office of the Chief Medical Examiner (OCME) report dated March 22, 2024, it was determined that Captain Rinaldo died of complications resulting from smoke and thermal injuries. The manner of death was classified as an accident.

CAUSE & CLASSIFICATION

The Baltimore City Fire Department Fire Investigation Bureau began the investigation into origin and cause and requested assistance from Baltimore City Police Department's Arson and Explosives Unit and the Bureau of Alcohol Tobacco, Firearms and Explosives (ATF).

The ATF concluded that the cause of the fire is UNDETERMINED. The two hypotheses for ignition sources, they were unable to eliminate were failure of the structure's electrical system and careless use of or improperly discarded smoking material. Both hypotheses are accidental in nature, so the final classification of the incident after ATF analysis is ACCIDENTAL.

*(**Photos 14, 15 and 16** are images post-incident of Side's Alpha, Charlie and an aerial view respectively.)*

*(**Photo 14**: Exterior of Side Alpha of 5210 Linden Heights as outlined in yellow.)*

*(**Photo 15**: Exterior of Side Charlie of 5210 Linden Heights as outlined in yellow.)*

*(**Photo 16**: Overhead post-fire image of the involved structure as outline in yellow. Photograph provided by the Howard County Police Department. Investigator Note – the location of BCFD Engine 29 located on the street on Side Alpha is the location it parked upon its arrival to this fire incident.)*

TIMELINE OF SIGNIFICANT EVENTS

TIME	EVENT
1529	4 mins prior to fire, contractors documenting work of 5208 Linden Heights Ave
1533	Fire in lower corner of siding on exterior wall of enclosed porch of 5210 is discovered
1536	Smoke visible from side CHARLIE
1541	FCB dispatches 1st Alarm
1542	Engine 46 is added to the response 5210 Linden Heights - significant fire visible, BRAVO side of bump out
1543	Squad 40 is added to the response
1544	Engine 29 arrives, gives BIR, establishes command, and deploys for fire attack on side ALPHA
1545	BC5 arrives, calls for Working Fire Captain Rinaldo and EMT/FF Pitts turn on their SCBA
1546	Engine 52 arrives on scene as RIT
1547	BC5 assumes command and establishes command post Truck 12 is added to the response
1548	IC asks Engine 29 if they have reached the back of the dwelling Engine 46 is deploying a handline to side CHARLIE Captain Rinaldo has no air exchange from his 2nd stage regulator for over 40 seconds
1549	**1st MAYDAY is called** **IC acknowledges** **2nd MAYDAY is called**
1550	IC calls for RITF and emergency radio traffic only Captain Rinaldo and EMT/FF Pitts have catastrophic air leakage from SCBA Front window self-ventilates, flames are evident on ALPHA side Water is applied by Engine 46 to 5212 Linden Heights Ave from side CHARLIE
1551	IC calls for 2nd alarm Squad 40 calls 3rd MAYDAY for bars on alpha side window EMT/FF Pitts' SCBA runs out of air Truck 12 OIC removes bars from ALPHA window and enters for search
1552	Capt. Rinaldo's SCBA runs out of air Capt. Rinaldo is removed from IDLH and taken to porch Rear enclosed porch collapses
1553	IC makes Engine 52 OIC Rescue Group Supervisor
1554	CAR5 (still enroute) tells the IC to place suppression units on another channel
1555	EMT/FF Pitts is removed Squad 40 states both members from Engine 29 are accounted for IC orders units to remain on the same channel and prepare for a PAR
1556	Capt. Rinaldo is moved to sidewalk IC makes Truck 12 OIC the Rescue Group Supervisor

TIMELINE OF SIGNIFICANT EVENTS *(continued)*

1557	IC Confirms all 4 members of Engine 29 are accounted for, announces emergency traffic only to conduct PAR Car 5 verbalizes on scene
1558	BC5Tech starts PAR
1559	EMT/FF Pitts is placed on stretcher and moved to transport unit
1600	Capt. Rinaldo is placed on stretcher and moved to transport unit
1601	PAR is complete
1840	Fire placed under control

INDIVIDUAL MEMBER TRAINING AND EXPERIENCE PROFILES

The Member Training Profiles are listed below for Captain Rinaldo, EMT/FF Pitts, the two dispatched Battalion Chiefs, and the Shift Commander. Included in each profile are the members' Maryland Fire and Rescue Institute (MFRI) transcript data, self-reported college education, and Fire-Records training data which includes documented Company, Battalion, and Fire Academy training.

Fire "experience" was also obtained for each member. This was acquired by running a report of all incidents with code 111- Structure Fires. The accuracy of this data is contingent on the initial report writer having properly entered the members' Departmental Identification Number (DID) for the incident.

Also included in each officer's profile is MOP 110-3 compliance. MOP 110-3 was published on August 17, 2014, to provide formal education requirements for officer promotional tests beginning in 2015. The policy covered the ranks of Lieutenant, Captain, Battalion Chief, Deputy Chief and above. It was revised on August 3, 2018, to remove the requirements for the ranks of Deputy Chief and above. Full implementation was achieved as of January 1, 2019, and it was last revised on October 3, 2022.

The policy does not require members who were promoted prior to implementation to obtain the formal training requirements consistent with their rank. However, if members chose to promote to the next position, they must have the qualifications for the new position prior to application.

DEPUTY CHIEF ARLEN DOLES

Hired March 1993

Promoted to Deputy Chief in February 2020

College

Member attended Salisbury State University, Community College of Baltimore City, and Morgan State University collectively from the late 1980's until the mid-1990's with cumulative credits totaling near 90.

MFRI Transcript

Essentials of Firefighting I-IV Equivalency 06-04-1993

EMT/B Bridge 03-31-1998

Command and General Staff Functions for The Incident Command System 12-07-2007

Fire Department Safety Officer 02-03-2012

BCFD Training Summary

DC Doles has 15 entries for department level training over the last 5 years since the BCFD switched to an updated records entry program. See Appendix for full list.

Compliance and Experience

DC Doles is compliant with MOP 110-3, 2018 edition which contained no education and training requirements for the ranks of Deputy Chief and above.

Member served in the rank of Deputy Chief for 3 years and 8 months prior to this incident. Before that he served in the rank of Battalion Chief for 4 years and 7 months. The IR Team obtained incident frequency data, but it was very low and presumed inaccurate due to lack of Fire-Records DID entry.

BC MICHAEL RUDASILL

Hired May 1998

Promoted to Battalion Chief in September 2010

College

Waldorf University, Forrest City, Iowa, 2013-2016
Bachelor of Applied Science Fire Science Administration
Bachelor of Applied Science Organizational Leadership
University of Baltimore, Baltimore Maryland, 2019
Master of Public Administration

MFRI Transcript

Emergency Medical Technician - Basic 06-12-1998
Hazardous Materials Operations (24 Hours) 06-29-1998
Firefighter I 07-23-1998
Firefighter I 07-31-1998
Aerial Apparatus Operators Truck Company Operation 03-14-2000
Rescue Technician Revised 60 Hours 03-23-2000
Pump Operator 30 Hours 04-17-2000
Automatic Sprinkler & Standpipe 04-22-2000
Arson Awareness for The Company Officer (1998) 04-22-2000
Hazardous Materials Technician 05-02-2000
Emergency Services Trench Rescue 09-04-2002
WMD Equipment Training - 24 Hours 04-24-2003
Haz Mat Tech Refresher - 8 Hours 08-20-2003
Travel IR Portable Chemical Analysis System 09-12-2003
Instructor I 04-10-2006
Instructor II 05-15-2006
Executive Development Seminar: Command Safety and Effective Media Relations 11-19-2010 Chief Officers Seminar 03-13-2011
Eds: Fire Dynamics and Flashover 04-28-2011
Fire Department Safety Officer 02-03-2012

Other Training

National Fire Academy
ICS-100, 200, 300, 400, 700, 800
FDNY – Mental Performance Program, April 2023

BCFD Training Summary

BC Rudasill has 50 separate training entries on his BCFD Training summary since the BCFD switched to a new training records entry program over the last 5 years. See Appendix for full list.

Compliance and Experience

BC Rudasill promoted to Battalion Chief, 4 years prior to MOP 110-3 being released. He has been a Battalion Chief for over 14 years. Fire-Records data indicates BC Rudasill either commanded or assisted at a total of 965 Structure Fires prior to this incident.

BC JOHN ELLIS

Hired February 1994

Promoted to Battalion Chief July 2015

MFRI Transcript

Firefighter II 05-20-1994
Nuclear, Biological, Chemical, Awareness 06-30-2003
Instructor I 10-05-2007
Incident Safety Officer 10-24-2007
Command And General Staff Functions in The Incident Command System 12-07-2007
Incident Leadership (NWCG L-381) 01-29-2010
All-Hazards Incident Management Team (FEMA Level III) 03-20-2010

BCFD Training Summary

BC Ellis had 16 entries for department level training over the last 5 years since the BCFD switched to an updated records entry program. See appendix for full list.

Compliance and Experience

BC Ellis applied for the Battalion Chief's exam prior to the release of MOP 110-3 in August 2014. He was a Battalion Chief for 8 years. Fire-Records data indicates BC Ellis either commanded or assisted at a total of 596 Structure Fires prior to this incident.

CAPTAIN DILLON RINALDO

Hired July 2017

Promoted to Lieutenant July 2022

MFRI Transcript

EMT-B 09-13-2017
Emergency Vehicle Operator 11-13-2017
Firefighter I 12-15-2017
Firefighter II 01-02-2018
Public Safety Life Educator 01-09-2018
Hazardous Materials Operations 01-19-2018
Rescue Tech: Site Operations 01-29-2018
Rescue Tech: Vehicle Machinery Extrication 02-06-2018
Firefighter Survival and Rescue 12-06-2019
Fire Officer I 12-03-2020
Instructor I 02-11-2021
Fire Officer II 10-14-2022
ICS 300 11-21-2022
ICS 400 12-12-2022
Conducting Safe Live Fire Training Evolutions 02-02-2023
Instructor II 05-05-2023

BCFD Training Summary

Captain Rinaldo had over 600 entries for department level training over the last 5 years since the BCFD switched to an updated records entry program. See appendix for full list.

Compliance and Experience

Captain Rinaldo applied for the Lieutenant's exam in Spring 2021 after MOP 110-3 was fully implemented. His training record shows he was compliant with the MOP. Captain Rinaldo was documented to have been on 43 structure fires before his promotion and 31 structure fires as a Lieutenant prior to this incident.

EMT/FF RODNEY PITTS

Hired October 2022

Assigned to the Field August 2023

MFRI Transcript

Emergency Vehicle Operator 11-01-2022
Firefighter I 12-16-2022
Emergency Medical Technician 02-16-2023
Rescue Technician-Site Operations 04-17-2023
Technical Rescue: Common Passenger Vehicle Rescue 04-25-2023
Hazardous Materials Operations 05-09-2023
Firefighter Survival and Rescue 05-12-2023
Firefighter II 06-01-2023

BCFD Training Summary

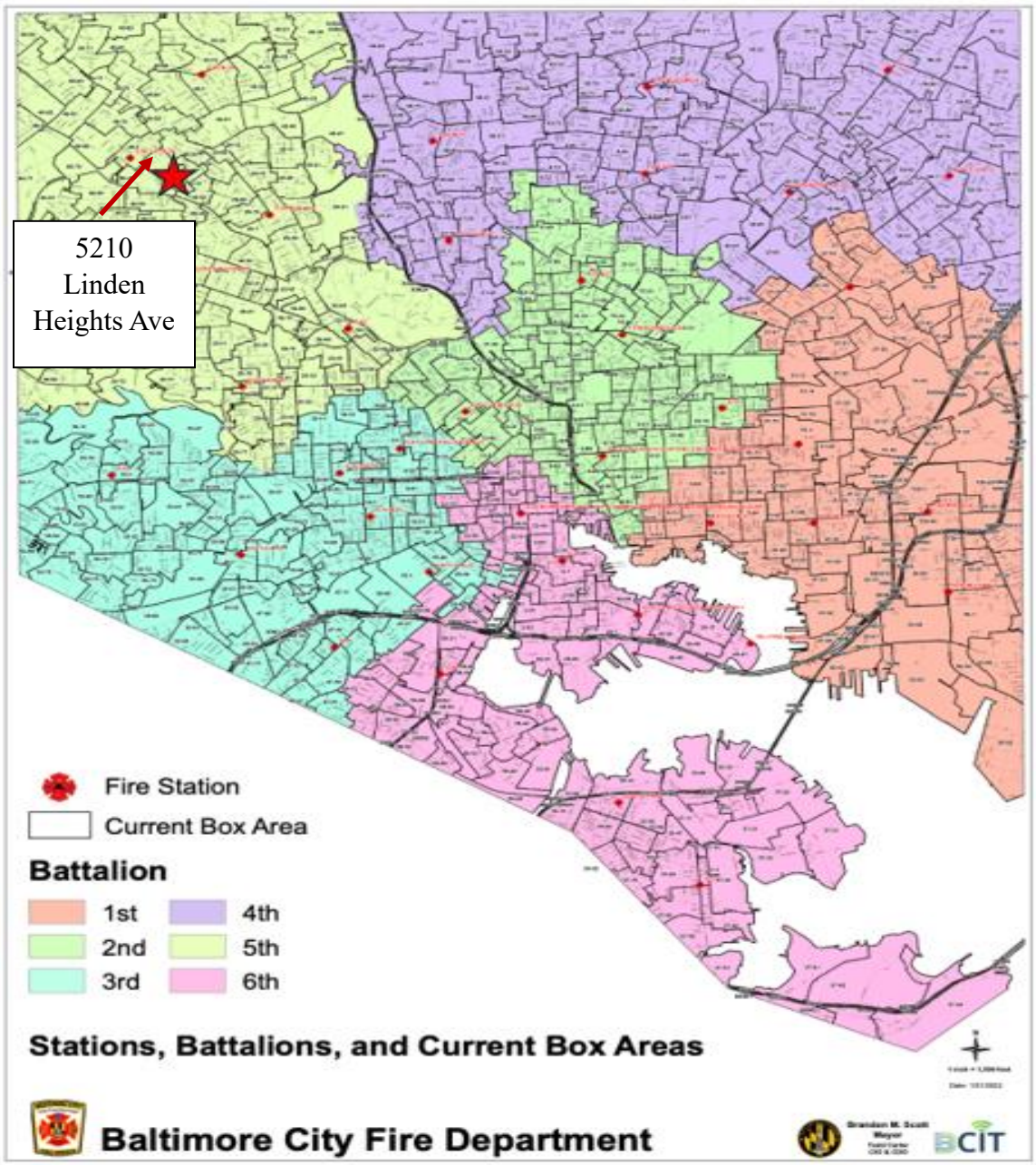
EMT/FF Pitts had 13 entries for department level training in the 2 months he was in the field before this incident. See appendix for full list.

Experience

EMT/FF Pitts responded to only one Structure Fire before this incident. The role of his unit on that previous fire did not involve interior attack. This was his nineteenth, 24-hour shift.

OPERATIONAL SUMMARY OF UNITS

The information in this section is a collection of facts for each unit operating on the first alarm of the incident. Also included are additional units that responded later, but played a role in the MAYDAY, rescue efforts, or transport of Captain Rinaldo and EMT/FF Pitts. This information was collected from members' written accounts, interviews, PPE evaluation, cell phone videos, police body-worn cameras, apparatus data collection devices, staffing records, communications recordings, CAD data, and SCBA recorder data.



ENGINE 29- FIRST DISPATCHED ENGINE, FIRST ENGINE TO ARRIVE

Dispatched as the first engine, Engine 29 responded from their quarters at 4312 Park Heights Ave, Baltimore, MD 21215, approximately 1.6 miles in distance from the incident address. The officer of the unit was working a trade-of-shift, away from his normal assignment at Engine 46. The Pump Operator was working an overtime shift at his normal assigned unit. The Pipe and Lead Off members were at their normal assigned unit and shift.

The unit took 32 seconds to turnout and 3 minutes and 13 seconds from dispatch to arrive on scene. Engine 29 stopped and lead off 4-inch supply hose at the hydrant located at W. Belvedere and Linden Heights Avenues in accordance with MOP 602-1. The officer of Engine 29, Captain Rinaldo, then transmitted a brief initial report indicating arrival, stating structure type, conditions encountered and assumed command, complying with MOP 602-4, "Engine 29 – 2 story middle of the group – fire showing from the rear – you can make me command." Fire Communications Bureau (FCB) then repeated this on Fireground 1, however incorrectly stating this as Squad 40.

EMT/FF Pitts, assigned the pipe position, stretched 250 feet of 1 ¾" handline, which was shortened by the Pump Operator and made into 200 feet of 1 ¾" hose. It is important to note this was a probationary member and this was his first fire of this magnitude and his nineteenth 24-hour shift.

Members arrived to find an occupied dwelling with the front doors closed. The doors consisted of a storm door and house door. Masking up prior to entering the porch front due to heavy smoke conditions, Captain Rinaldo then opened the door without resistance or need of force. The front door was kept open while the storm door had closed on the charged line; this was not shown to impede the hose line's advancement.

The lead off member of Engine 29, after being relieved by Squad 40 from connecting to the hydrant, reported feeling immediate intense heat upon opening the storm door. He was able to hold it open with his leg to assist in the advancement of the hose line for his crew. It was shortly after this point the members on scene reported hearing yelling which grew more intense, as the heat became "unbearable."

There was no evidence, mechanically or from firsthand accounts, of Engine 29 opening the hose line at any point in the incident.

BC5 arrived at 1545 hours and assumed command from the Engine 29 officer. Four minutes and four seconds after BC5 assumed command, a MAYDAY was transmitted by Captain Rinaldo. "Engine 46 MAYDAY, MAYDAY, MAYDAY." Captain Rinaldo transmitted his permanent assignment at the time instead of the unit he was commanding. This was immediately acknowledged by the incident commander. A second transmission occurs from the Engine 29 officer "Engine 29, MAYDAY, MAYDAY, MAYDAY first floor," which was again acknowledged by the incident commander. Engine 29's officer then stated at 15:49 "29, we can't get out" and keys up seconds later without transmission.

Members then reported seeing EMT/FF Pitts appear at the front window, behind the window bars which were secured to the dwelling.

The radio transmission log for Engine 29's portable 3, used by EMT/FF Pitts, had a total of 11 rejected radio transmissions that all occurred over a 43 second period. The first occurrence was immediately after Captain Rinaldo called the second MAYDAY. Engine 29's portable 3 radio was later found with the remote speaker microphone completely detached and separated from the portable with the cord wrapped around Captain Rinaldo's SCBA harness.

The cause for the MAYDAYS was presumed to be related to extreme heat conditions that led to SCBA failure, turnout gear failure, or a combination of both. Captain Rinaldo stated to EMS providers during transport to the hospital later in the incident that a flashover occurred.

Both members experienced catastrophic SCBA failures of their facepiece and UEBSS supply hose (Buddy Breather). The failures occurred at 1550 hours, less than 4 minutes after the members donned their SCBA. Captain Rinaldo experienced a loss of air supply around the time he called the MAYDAY. Just afterwards, both EMT/FF Pitts' and Captain Rinaldo's SCBA systems experienced a massive leak, rapidly depleting their air supply. It is unclear if the facepiece or the Buddy Breather hose was the initial cause for the leak, as both were found significantly damaged. That is when Captain Rinaldo called the 2nd MAYDAY. Both members' air supply depleted within 2 minutes of the failure(s), reaching zero pounds per square inch (PSI) just before 1552 hours.

Both members' turnout coats had severe charring to the arms, shoulders, and chest with heat penetration to the thermal barrier. Both of their turnout pants had light charring. Both of their helmets had significant thermal damage over the entire shell. EMT/FF Pitts' helmet chinstrap buckle was melted, and his hood was charred and embrittled on the top, indicating absence of the helmet at some point during the thermal exposure. Captain Rinaldo's hood was intact but had heavy thermal damage. Both members' sets of gloves had severe thermal damage and shrinkage.

Captain Rinaldo was the first to be removed from the dwelling. He was conscious and alert, but non-ambulatory. He was taken to the porch and then the yard for medical care. EMT/FF Pitts was removed shortly thereafter in cardiac arrest.

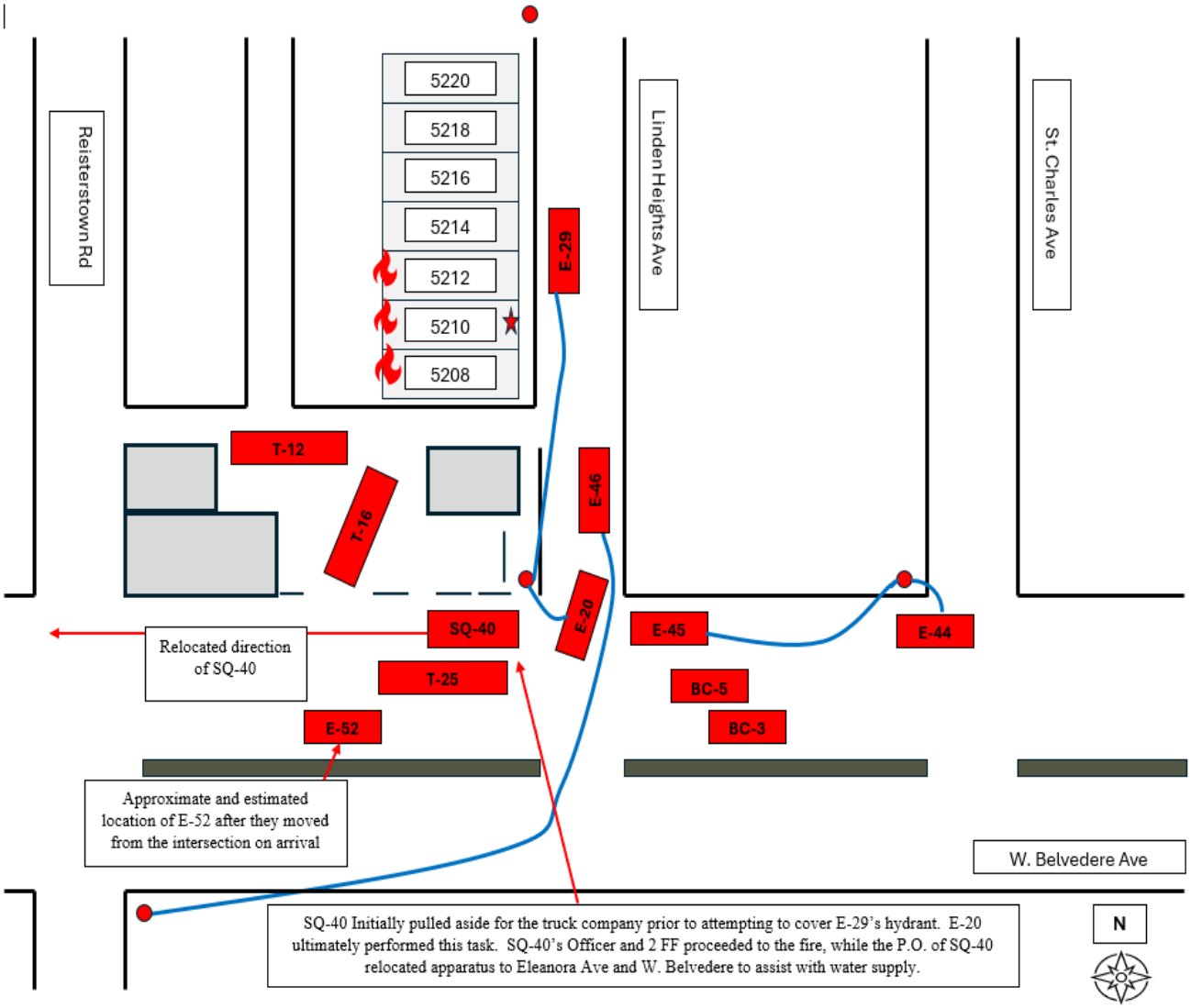
EMT/FF Pitts immediately received CPR upon removal from the building. CPR continued while the member was moved to the medic unit. Medic 11 and EMS 5 provided ALS treatment for EMT/FF Pitts while he was transported to University of Maryland Shock Trauma Center at 1611 hours. EMT/FF Pitts was pronounced dead by hospital staff on October 19, 2023. In an Office of the Chief Medical Examiner (OCME) report dated January 29, 2024, it was determined that EMT/FF Pitts died of smoke inhalation and thermal injuries. The manner of the death was classified as an accident.

Captain Rinaldo was conscious and alert upon removal, but not ambulatory. He was verbally expressing concern for EMT/FF Pitts during his treatment on scene. He received ALS care enroute to the hospital. Medic 15 transported Captain Rinaldo to University of Maryland Shock Trauma Center at 1605 hours.

After receiving initial treatment at Shock Trauma, Captain Rinaldo was transferred to Johns Hopkins Bayview Burn Center on the evening of October 19, 2023. He later succumbed to his injuries in the overnight hours of October 24, 2023. In an Office of the Chief Medical Examiner (OCME) report dated March 22, 2024, it was determined that Captain Rinaldo died of complications of smoke inhalation and thermal injuries. The manner of the death was classified as an accident.

The lead off member from Engine 29 who assisted with removing EMT/FF Pitts was treated and transported to Johns Hopkins Bayview Burn Center, priority 3. He was released later in the evening on October 19, 2023. He returned to work in February of 2024.

OVERVIEW GRAPHIC OF IMMEDIATE INCIDENT AREA & SIGNIFICANT UNIT POSITIONING



ENGINE 45- SECOND DISPATCHED ENGINE, SIXTH ENGINE TO ARRIVE

Dispatched as the second assigned engine, Engine 45 responded from their quarters at 2700 Glen Avenue, Baltimore, MD 21215, which is approximately 2.1 miles in distance from the incident. The Officer, Pump Operator and Pipe member were working on their assigned unit and shift. The Lead Off member was at his assigned unit but working overtime on the date of the incident.

The unit took 1 minute and 35 seconds to turnout and 6 minutes and 53 seconds from dispatch to arrive on scene. They arrived after Squad 40 transmitted that they were covering Engine 29's hydrant. Engine 45 called in a hydrant at St. Charles and W. Belvedere Avenues. While the Lead Off member was connecting the supply line to the hydrant and the Pipe member was deploying the 400' 1 ¾" alley line, the MAYDAY was called. The members from Engine 45 continued to work to deploy their alley line to side Charlie. They noticed that the rear porch of the main fire building had already collapsed prior to their extinguishment efforts.

The members from Engine 45 collectively made a total of five (5) radio transmissions requesting to charge handlines and ask for water during the active MAYDAY operation. After the MAYDAY concluded, Engine 45 continued to work on side Charlie under the Charlie Division Supervisor for the remainder of the incident. They eventually deployed an additional 2 1/2" attack line.

ENGINE 52 – THIRD DISPATCHED ENGINE, FIFTH ENGINE TO ARRIVE

Dispatched as the third due Engine-RIT, Engine 52 responded from their quarters at 3525 Woodbrook Avenue, Baltimore, MD 21217, approximately 2.8 miles from the incident. The company consisted of an Acting Lieutenant and Acting PO on their assigned unit and shift and Pipe and Lead Off members who were both detailed from outside the company.

The unit took 50 seconds to turnout and 5 minutes and 18 seconds from dispatch to arrive on scene. Engine 52 arrived on the scene at 1546 hours stating "52, I'm on scene RIT." The members reported to side Alpha to assume RIT responsibilities. Engine 52's apparatus initially blocked Linden Heights Avenue upon their arrival but the Acting PO moved the apparatus out of the way on West Belvedere Avenue. The Acting Lieutenant, Pipe and Lead Off reported to side Alpha where the Acting Lieutenant noted "heavy black smoke, a quick wave of fire, and no indication of water flowing." Once the apparatus was positioned out of the way, the Acting PO donned PPE and reported to the fire building.

The members from Engine 52 did not attempt to soften the building by removing the bars from the windows. In interviews they stated that this is a task traditionally performed by truck companies. The Pipe member attempted to force entry into the Delta exposure when he thought he heard the MAYDAY called for the 2nd floor of 5210 Linden Heights Avenue. The Lead Off member did not hear the MAYDAY call. Upon receipt of the MAYDAY, the RIT self-deployed to the Alpha side front porch of 5210.

At 1553 hours, Command assigned Engine 52 as the Rescue Group Supervisor and requested a report for any members from Engine 29 that were removed from the building. The Pipe member grabbed Engine 29's ground ladder to access the porch roof and 2nd floor windows when he noticed the MAYDAY was on the 1st floor. Engine 52 relocated to the first floor and ultimately achieved their primary objective of locating the downed firefighters. Engine 52's Acting Lieutenant and Pipe assisted with the removal of the members while Lead Off utilized Engine 29's bumper line to knock down fire at the eaves of the roof. Members involved in the rescue indicated that when they grabbed the SCBA harness of the downed firefighters, the harnesses fell apart. They stated that they used the Gemtor harness immediately after, and that is when they were able to successfully remove the members.

During interviews, members of the RIT team expressed feeling ill-prepared for the challenges faced during this incident. They also did not notice the activation of nearby Personal Alert Safety System (PASS) alarms. Despite being involved in rescue efforts, the RIT was unaware of the sounding alarms, as evidenced by video footage. The auditory exclusion of PASS alarms was not unique to Engine 52 as it was evident with every unit interviewed.

ENGINE 20 – FOURTH DISPATCHED ENGINE, FOURTH ENGINE TO ARRIVE (estimated)

Dispatched as the fourth engine, Engine 20 responded from their quarters at 3130 West North Avenue, Baltimore, MD 21216, approximately 3 miles from the incident. The company consisted of the Lieutenant, Acting Pump Operator, and Pipe on their assigned unit and shift and a Lead Off member who was on overtime, detailed from outside the company.

When Engine 20 left to respond from quarters, Truck 18 was still in station. Truck 18 was previously dispatched on a non-emergency lift assist response and had not pulled out of the station yet. The officer of Engine 20 recommended to the Acting Lieutenant on Truck 18 to add themselves to the response on Linden Heights. Truck 18 did not make the request.

The unit took 16 seconds to turnout. The Officer of Engine 20 did not activate the appropriate status on the Mobile Data Terminal consistent with MOP 602-4 and therefore there was no record in the CAD that indicated their exact arrival time and order. They positioned their apparatus on the hydrant from which E29 deployed a supply line, assuming the duties of the fourth engine.

The Acting PO from E20 initially supported the establishment of a constant water supply to E29. In doing so, he positioned the unit in a way that prevented any other apparatus from accessing Linden Heights Avenue. As a result, no other equipment, such as the first due ladder truck, was able to position on side Alpha. The Acting PO also reported in interviews that he assisted with the patient care of EMT/FF Pitts when he was removed from the structure.

The balance of the crew from E20 positioned an attack line from E29 to the exposure on side Delta. They entered the structure and were faced with significant heat with no obvious fire. When they heard the MAYDAY, they repositioned to the front porch of the exposure on side Bravo and discharged water into the front window of 5210 Linden Heights Avenue.

ENGINE 44 – FIFTH DISPATCHED ENGINE, SEVENTH ENGINE TO ARRIVE

Dispatched as the fifth engine, Engine 44 responded from their quarters at 2 Upland Road, Baltimore, MD 21210, approximately 3.6 miles from the incident. The company consisted of the Lieutenant, Pipe and Lead Off members on their assigned unit and shift and a Pump Operator who was on overtime, detailed from outside the company.

The unit took 34 seconds to turnout and 6 minutes and 45 seconds to arrive on scene after dispatch. Engine 44 was dispatched fifth and arrived as the seventh engine due to Engine 46 and Squad 40 being added to the response.

In their route of travel, Engine 44 pulled up to Engine 46. Upon seeing Engine 44, the Lead Off member of Engine 46 believed their hydrant was covered, but it was not. Engine 44 left and continued to find Engine 45's hydrant. They covered Engine 45's hydrant at St. Charles and W. Belvedere Avenues. They announced on the radio that they were covering Engine 45's hydrant. Engine 44 covered their assignment as per MOP 602-1.

Engine 44 arrived on the hydrant of Engine 45. The Pump Operator stayed at the hydrant and hooked up and started to pump the hydrant. The remaining three members began to walk towards the scene, about three blocks away.

When Engine 44's crew arrived at Engine 46, the Officer had one member assist with getting Engine 46's supply line hooked up to the engine. The Officer and Pipe pulled a five-side, 250 foot pre-connect attack line of 1 ¾" hose. They advanced it to the rear of the dwelling to assist in knocking down the fire on the exterior of the three dwellings that were involved in fire. The officer reported, as they advanced the line to the rear of the dwellings, that he heard the MAYDAY being called.

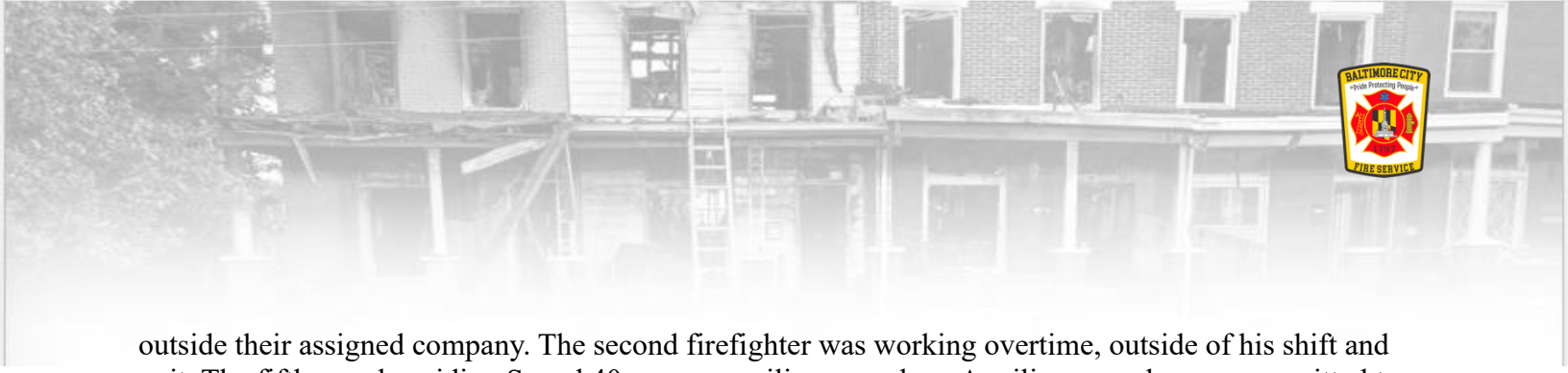
Engine 44 requested three (3) times for their line to be charged by Engine 20 during the MAYDAY operations and while emergency traffic only was ordered by Command. The line they pulled was from Engine 46, not Engine 20. The 4th request was made to Engine 46.

Engine 44 also assisted with operating a portable monitor pipe on the Charlie side later in the incident and after the MAYDAY was resolved.

SQUAD 40- REQUESTED THE BOX- SECOND ENGINE TO ARRIVE

Squad 40 was not initially dispatched on the dwelling fire. They were clearing a medical incident in Engine 46's area, off of Seton Drive. They made two requests to be added to the box that were initially unanswered by BC5. At 1542 hours, they requested a third time to be added to the box, reporting their location as Rogers Avenue and Wabash Avenue making them 0.8 miles away from the incident. Permission was granted by Battalion Chief 5 in accordance with MOP 601-3.

Squad 40 was operating with 5 members on this incident. The Officer and Pump Operator were working on their assigned unit and shift. One firefighter was working their normal shift but was detailed from



outside their assigned company. The second firefighter was working overtime, outside of his shift and unit. The fifth member riding Squad 40 was an auxiliary member. Auxiliary members are permitted to ride apparatus and assist with exterior firefighting tasks, including hooking up to the hydrant, advancing hose lines on the outside, assisting with ladder placement, and checking for fire extension after the fire is out.
SQ40 arrived second, 12 seconds after Engine 29 called in their hydrant location. Squad 40 transmitted that they were covering E29's hydrant. SQ40 moved their apparatus to allow access for a truck company. When SQ40 temporarily moved, E20 then took their assigned position as 4th due and covered E29's hydrant. Due to E20 now covering E29's hydrant, this left SQ40 uncommitted. After the MAYDAY the PO of SQ40 secured an additional water source and supplied other units involved in fire extinguishment.

The Officer in Charge of SQ40 ordered his crew to deploy a second handline from E29's apparatus to back up E29's crew. As the line was being deployed, Engine 29's officer transmitted a MAYDAY. Upon reaching the dwelling with the line, SQ40's crew heard the second MAYDAY. As the Officer of SQ40 entered the structure to search for and locate E29's officer, this handline assisted in the rescue of the second downed member of E29 by keeping the fire and heat back and protecting the crews.

As SQ40's Pipe was preparing to enter 5210 Linden Heights Avenue with his charged hose line to assist with fire attack, he observed a member in distress at the first-floor front window. The window still had bars on it. SQ40 Pipe immediately transmitted a MAYDAY in accordance with MOP 602-13, requesting assistance and a saw for removal of window security bars.

The auxiliary member of Squad 40 assisted with flaking out and feeding handline. He experienced a rush of heat from the exterior occurring simultaneously with the MAYDAY call. After members were rescued, he helped retrieve additional medical equipment.

The Officer and Pipe of Squad 40 were both transported to Johns Hopkins Bayview Burn Center. The Officer was treated and released on October 19, 2023. He returned to work in February 2024. The Pipe member was treated and held for two nights, then released on October 21, 2023. He returned to work in February 2024.

ENGINE 46- REQUESTED THE BOX- THIRD ENGINE TO ARRIVE

Engine 46 was returning from EMS Recertification training when the incident was dispatched. They requested to be added to the box, reporting their location at Reisterstown Road and Druid Park Drive, 2.3 miles away. Battalion Chief 5 acknowledged the request, had them added to the box and instructed them to "fall in on the box where you belong." They went enroute 2 minutes and 27 seconds after the initial dispatch.

Engine 46 was staffed with 4 personnel. The Officer was from the unit, on his shift, but was operating in an acting position. The Pump Operator and both Firefighters were on their assigned shift but detailed from other companies. Engine 46 arrived 3 minutes and 14 seconds after requesting to be added to the incident. This was 5 minutes and 41 seconds after the initial dispatch. They secured a hydrant at

W. Belvedere Ave. and Reisterstown Rd. and assumed the 2nd due engine company assignment. They never radioed in their hydrant location or assignment. On their approach on W. Belvedere Avenue, they passed by the rear of the dwellings, making a left onto Linden Heights Avenue and stopped at the alley alongside the Bravo exposure.

Engine 46 was given an order by the IC to stop the fire from walking down the block in the rear. Engine 46's officer acknowledged and deployed the 400 foot, 1 ¾" alley line off the rear of Engine 46 to begin knocking the fire in the rear of the dwellings. The MAYDAY was being declared as they were advancing this line.

Engine 46's hydrant was not covered. Engine 44 pulled up to Engine 46's hydrant. This caused the Lead Off member to leave the hydrant and report to the apparatus, assuming E44 was covering E46. Engine 44 called in that they were covering E45's hydrant. When Engine 44 realized it was not Engine 45's hydrant that they pulled up to, they relocated, leaving Engine 46 without a cover.

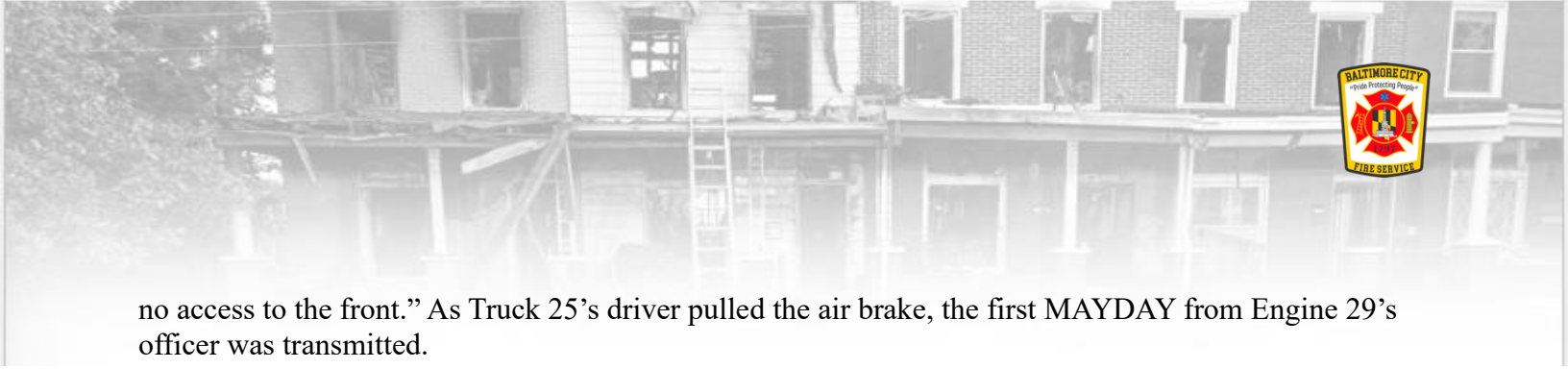
Engine 46 called for Engine 44 to charge their hydrant at 1553 hours, which was four (4) minutes after the MAYDAY was declared. Engine 46's officer called for more pressure. E46's PO reported back to "stand by waiting for the hydrant to be charged we are almost out of water." At 1555 hours, E46 reported that they have "zero water, we need water." E46 portable 2 reports back "I'm working on it, nobody's charged the plug, so I got to run down there and charge it." There were five (5) radio transmissions from Engine 46 members regarding water supply during the "emergency traffic only" declaration.

TRUCK 25- FIRST DISPATCHED TRUCK, FIRST TO ARRIVE

Dispatched as first due truck, Truck 25 responded from their quarters located at 3724 Roland Avenue, Baltimore, MD 21211, approximately 4.0 miles from the incident. The company consisted of an Officer, two Emergency Vehicle Drivers, and one Firefighter that were all working on their assigned unit and shift.

Truck 25 was dispatched first on this incident, but it was well outside their normal response district. This occurred because the closest truck companies for this response were either out of service for minor apparatus adjustments or on other calls: Truck 18 was on a non-emergency lift assist, Truck 27 was at the Fire Apparatus Coordinator getting their Niederman magnet adjusted, and Truck 12 was clearing an EMS response. Due to these other activities, Truck 25 was the closest available truck at the time of dispatch.

Truck 25 took 1 minute and 30 seconds to turnout and arrived 7 minutes and 45 seconds after being dispatched. They met the other 2 trucks on the box alarm, Truck 16 and Truck 12, at the intersection of West Cold Spring Lane and Reisterstown Road. Truck 25 made the right onto Reisterstown Road, assuming their dispatched order as first arriving truck, then proceeded to make a right onto West Belvedere Avenue. They attempted to make the left turn onto Linden Heights Avenue, but access was blocked by Engine 20. At 1549 hours the officer of Truck 25 transmits, "T25 command, we have



no access to the front." As Truck 25's driver pulled the air brake, the first MAYDAY from Engine 29's officer was transmitted.

Members of Truck 25 noted seeing a large column of smoke at Falls Road and West Cold Spring Lane. Upon arrival on West Belvedere Avenue, they saw a large amount of fire on side Charlie with heavy black smoke pushing from the Charlie to the Alpha side of the dwelling. Members also noted some kind of wind condition moving from the Charlie side of the dwelling to the Alpha side that was affecting the smoke.

Truck 25's Tiller position exited the tiller cab, donned his PPE, and grabbed his equipment and the 16' extension ladder and immediately reported to the front of the fire building. He placed the 16' ladder on the Delta exposure and jumped the chain link fence dividing the fire building property and the Delta exposure property. He immediately noticed a remarkable amount of radiant heat from the fire building. At this moment, members were pulling Captain Rinaldo from the threshold of the dwelling and out to the steps of the front porch area. Truck 25 Tiller initiated air from his SCBA over Captain Rinaldo's airway.

Truck 25's Step position exited the truck, donned his SCBA, grabbed the 24' extension ladder and proceeded up the street to the Delta 2 exposure and placed his ladder to the porch front for eventual access to the roof. He then began assisting the driver on the roof with several vertical ventilation holes and eventually a trench cut on the Delta 1 exposure.

Truck 25's Driver position exited the truck, donned his personal protective equipment, grabbed his roof tools, and the 14' straight ladder off Engine 46. He proceeded to the Delta 2 exposure where Truck 25's Step position placed the 24' extension ladder which accessed the porch roof. The driver accessed the porch roof and placed the 14' straight ladder which Truck 25's crew used to access the roof. He then proceeded to fulfill the roles and duties of the 1st arriving truck driver with vertical ventilation.

Truck 25's Officer exited the apparatus, donned his SCBA and proceeded to the Delta 2 exposure roof with the Driver and Step of Truck 25. This is not consistent with MOP 602-2. Additional duties required of the first truck and identified in MOP 602-2 of forcible entry, assessing for fire extension, search and rescue, and working with engine crews to locate hidden fire, were not completed in the main fire building or exposures to the right by Truck 25.

TRUCK 16 – DISPATCHED SECOND DUE TRUCK, SECOND TO ARRIVE

Truck 16 was dispatched as the second due truck company from quarters at 405 McMechen Street, Baltimore, MD 21217 which is 4.8 miles in distance from the incident. The company consisted of the Officer and both Emergency Vehicle Drivers working on their assigned unit and shift, but the Emergency Vehicle Driver, Tiller was operating in an Acting EVD position. The Firefighter was on overtime, detailed from outside the company. Truck 16 was dispatched as the second truck on this incident, but it was well outside their normal response district. This occurred because the closest truck companies for this response were either out of service for minor apparatus adjustments or on other calls:

Truck 18 was on a non-emergency lift assist, Truck 27 was at the Fire Apparatus Coordinator getting their Niederman magnet adjusted, and Truck 12 was clearing an EMS response. Due to these other activities, Truck 16 was the second closest available truck at the time of dispatch.

Truck 16 took 22 seconds to turnout. They met the other 2 trucks on the box alarm, Truck 25 and Truck 12, at the intersection of West Cold Spring Lane and Reisterstown Road. The Officer of Truck 16 did not activate the appropriate status on the Mobile Data Terminal consistent with MOP 602-4 and therefore there was no record in the CAD that indicated their exact arrival time and order. They positioned their apparatus near the Charlie side of the dwelling in an adjacent business, assuming the duties of the second truck.

Members of Truck 16 noted the wind direction and velocity prior to arrival at the incident, stating that they could see a large column of smoke while enroute. The MAYDAY occurred right as Truck 16 was pulling into the lot at 4020 West Belvedere Avenue. Truck 16's Officer communicated to his members that he was going to side Alpha, and they should continue second due truck duties on the Charlie side.

Members from Truck 16 cut a chain link fence at the business where they were parked to access the Charlie side and the Bravo exposure. The Bravo exposure was fully involved with fire on Truck 16's arrival. Upon gaining access to the Charlie side, Truck 16 threw ladders, forced entry, searched for occupants, and checked for fire extension in the Delta one (1) and Delta two (2) exposures where interior operations were approved, at the direction of the Charlie Division Supervisor.

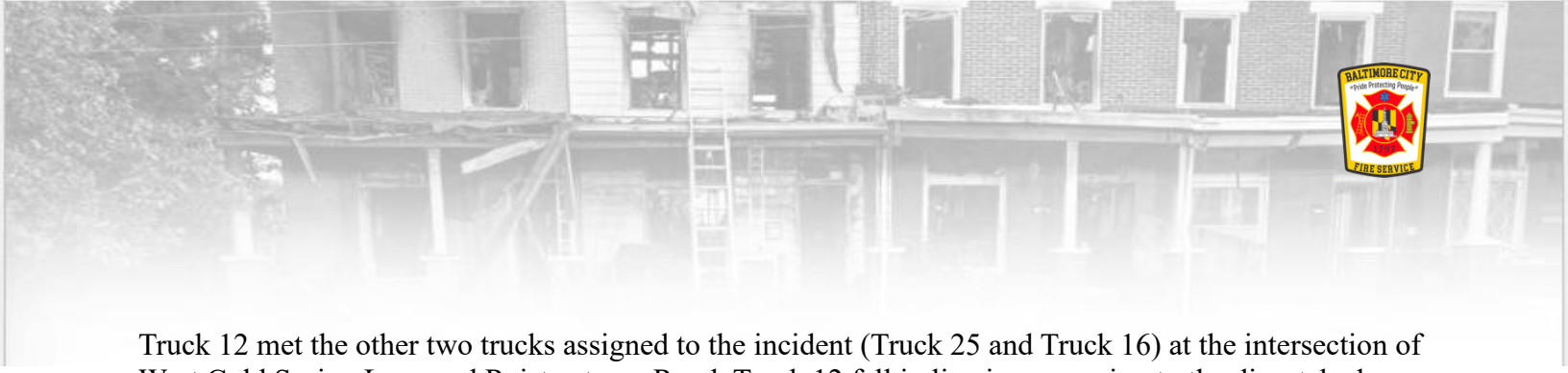
Truck 16's officer deployed directly to the front to assist with the MAYDAY operation. He located the officer of Engine 29 on side Alpha and asked him if anybody else was in the building.

The officer of Truck 16, working with the Officer of Truck 12, remained in the front room under the protection of a hose line in the front window for as long as physically tenable to continue searching for downed firefighters. They were unable to enter farther than a few feet and remained as low as possible. Once the PAR was complete, all members of Truck 16 continued second due truck operations for the duration of the incident.

TRUCK 12 – REQUESTED THE BOX, THIRD ARRIVING TRUCK

Truck 12 was not initially dispatched on the dwelling fire. They were on scene of an EMS call approximately 0.5 miles from this incident. Truck 12 cleared the EMS call and requested to be added to the box 6 minutes after the initial dispatch for 5210 Linden Heights Avenue in accordance with MOP 601-3. Permission was granted by Battalion Chief 5 stating, "Go ahead, take it, and when you arrive, I need you to get into 5212…. If you don't arrive here first, I don't have a truck on scene."

Truck 12 was operating with 4 members on this incident. The Officer and both Emergency Vehicle Drivers were working on their assigned unit and shift, but the Emergency Vehicle Driver-Tiller was operating in an Acting position. The Firefighter was working his normal shift but detailed from outside the company.



Truck 12 met the other two trucks assigned to the incident (Truck 25 and Truck 16) at the intersection of West Cold Spring Lane and Reisterstown Road. Truck 12 fell in line in procession to the dispatched address as the 3rd truck. Truck 12 made a right onto the alley just past and parallel to West Belvedere Avenue. They were able to access the Charlie side of the block on Linden Heights Avenue and saw three dwellings involved in the rear. Truck 12 arrived on scene 1 minute and 42 seconds after requesting to be added. This was 8 minutes and 25 seconds after the initial incident dispatch.

The Officer of Truck 12 noted that when they arrived in the rear, the second MAYDAY was being transmitted. The Officer immediately ran to the Alpha side of 5210 Linden Heights Avenue and had a face-to-face with Command, requesting to assist with the MAYDAY efforts. Command acknowledged. Once on the porch, Truck 12's Officer noticed the security bars on the 1st floor Alpha side window with the glass of the window already broken. He saw EMT/FF Pitts, who was on the interior of the large bay window with his hands on the security bars. The Officer of T12 noted that the member appeared elevated, with his face above his own head. Later it was determined that EMT/FF Pitts was likely standing on a piece of furniture just inside the window. The Officer used the adz end of the Halligan tool to force the security bars off the front window and witnessed EMT/FF Pitts fall from a standing position towards the front door (towards the officer of Truck 12's right as he's facing the Alpha side).

With the window security bars off the Alpha side of the dwelling, Truck 12's Officer used his tool to sweep the inside of the window area and cleared the immediate furniture out where he saw EMT/FF Pitts fall. He then entered the dwelling via the bay window to start searching for EMT/FF Pitts. Truck 12's Officer searched for approximately 30 seconds but couldn't locate EMT/FF Pitts and exited the dwelling through the bay window. Truck 12's Officer then re-entered the dwelling through the front door and located EMT/FF Pitts almost immediately. He was lying across a reclining chair with his body on the chair and his legs angled down towards the floor. The Officer of Truck 12, described the heat as "paralyzing", communicated with the IC, "Truck 12 to command, I'm with the downed member just inside the front door, I need engine companies to keep flowing water, we are trying to extricate him now."

The Officer of Truck 12 grabbed EMT/FF Pitt's SCBA harness in attempts to pull him out of the dwelling but couldn't move him due to the deterioration and failure of the structural components. He located the Officer of Engine 52 to assist in removing the downed member from the dwelling. The two members were able to remove EMT/FF Pitts from the dwelling using the Gemtor harness. Once EMT/FF Pitts was out on the front porch area and down the porch steps, medical care was started by members outside.

The IC reassigned T12's Officer as the Rescue Group Supervisor after Squad 40 reported members from Engine 29 were accounted for. Truck 12's Officer reentered the dwelling with the Officer of Truck 16 with a handline because they both believed that there were still members inside. The Officer from Truck 12 attempted to use his thermal imaging camera at this point.

They backed out shortly after due to high heat and continued to flow water from the porch. Truck 12's Officer rejoined his crew after the PAR was complete.

Truck 12's Tiller followed the officer. He was donning his SCBA facepiece when Captain Rinaldo was removed from the dwelling. He stayed with Captain Rinaldo and started providing medical care until the arrival of the Medic unit. The remainder of Truck 12's crew operated in accordance with MOP 602-2, throwing ladders and forcing entry on the Charlie side of the dwelling.

BATTATION CHIEF 5- DISPATCHED FIRST, ARRIVED FIRST

Battalion Chief 5 (BC5) was the 1st due Battalion Chief for this incident. They responded from quarters at 3906 Liberty Heights Avenue, Baltimore, MD 21207, 1.3 miles from the incident. Both the Battalion Chief and the Battalion Technician were working outside of their normal Battalions and shifts, on overtime.

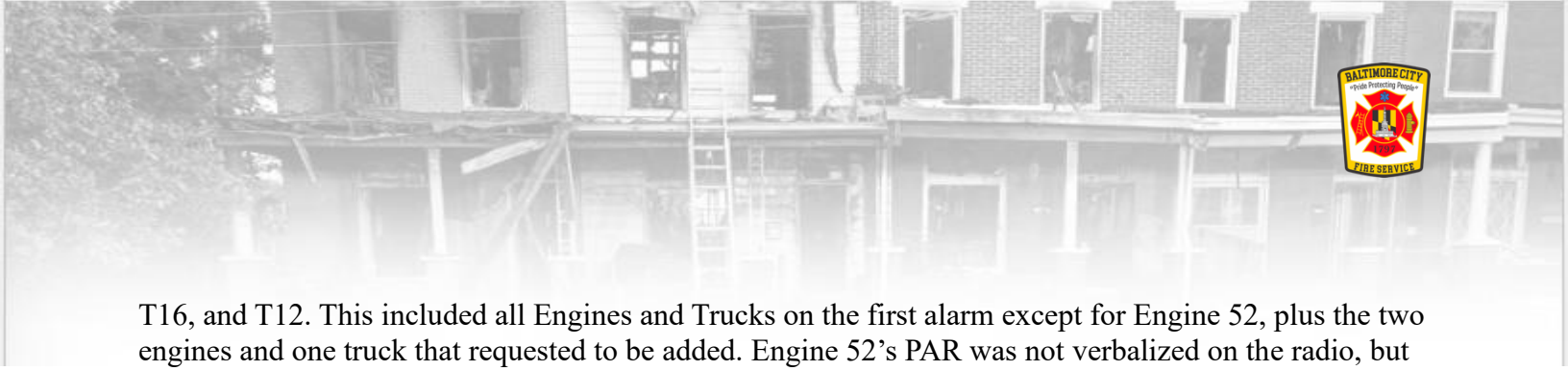
While enroute, BC5 confirmed that E52 acknowledged their assignment as RIT (Rapid Intervention Team). Several units requested to be added to the assignment that would normally be on it (SQ40, E46 and T12). These units were given permission from BC5 per MOP 601-3. While enroute BC5 reported a large plume of smoke in the area. He opted to keep the additional units enroute. BC5 radioed to E46 and E52 to fall in where they belong. This transmission was intended for E46 and SQ40 but not E52, as E52 was already assigned as RIT. The addition of these units by BC5 allowed suppression units to arrive faster which resulted in suppression efforts to begin sooner. Two of these units, SQ40 and T12 played key roles in search and rescue operations during the MAYDAY, resulting in the rescue of Captain Rinaldo and EMT/FF Pitts.

BC5 arrived 37 seconds after Engine 29, which was 3 minutes and 50 seconds after the initial dispatch. He immediately requested a Working Fire Assignment. As the IC was beginning to implement his Incident Action Plan (IAP), Engine 29's Officer transmitted the first MAYDAY message, approximately 5 minutes and 40 seconds after BC5 arrived. The IC immediately acknowledged the MAYDAY and attempted to gain control of the radio channel. The IC attempted to ascertain the member's location. Engine 29's Officer then transmitted a 2nd MAYDAY, approximately 17 seconds after the first MAYDAY. The IC again attempted to obtain E29's location.

The IC immediately called for "emergency traffic only" on the radio and requested a Rapid Intervention Task Force (RITF) dispatch and deployed the Rapid Intervention Team (E52). A 3rd MAYDAY was transmitted by SQ40's Pipe, who was on the front porch, for bars on the windows. The IC acknowledged this transmission and again attempted to obtain E29's location and status of E29's personnel but was unsuccessful. As the MAYDAYS were occurring, the fire extended into 3 dwellings and the IC requested a 2nd alarm.

The IC considered the appropriateness of moving fireground operations to a separate channel, but he decided it was unnecessary in this case, as it would have been detrimental to incident accountability. He continued incident mitigation through Charlie Division, advising him to work on extinguishing the fire from the rear using the 2nd alarm units.

After all members from Engine 29 were accounted for, the IC ordered BC5 Tech to conduct a PAR. The PAR was completed 3 minutes and 29 seconds after initiation. A total of 6 Engines and 3 Trucks were addressed on the radio during the PAR: E29 (PAR announced by IC), E46, SQ40, E45, E20, E44, T25,



T16, and T12. This included all Engines and Trucks on the first alarm except for Engine 52, plus the two engines and one truck that requested to be added. Engine 52's PAR was not verbalized on the radio, but video evidence shows it was visually completed. Three unit officers declared they were PAR by reporting their location but not their exact number of personnel.

Truck 16's PAR was incomplete. The officer accounted for 2 members and acknowledged that he did not have portable 3 and 4 with him. This transmission was misunderstood by BC5 Tech, and the unit was considered PAR. It was difficult to understand due to facepiece interference. T16's Officer later verified the location of his two members, 6 minutes after the PAR was complete.

BC5 maintained command for most of the incident. At 1818 hours BC5 transferred command to BC2, 2 hours and 37 minutes after the initial dispatch. This allowed BC5 to start the rehab and debriefing process. The fire was placed under control at 1839 hours.

BATTATION CHIEF 3- DISPATCHED SECOND, ARRIVED SECOND

Battalion Chief 3 (BC3) was the 2nd due Battalion Chief for this incident. They responded from quarters at 1503 West Lafayette Avenue, Baltimore, MD 21217, 4.7 miles from the incident. The Battalion Chief was working in his assigned unit and shift. The Battalion Technician was working his normal assignment, but on another shift as a shift trade.

BC3 and BC3 Tech both noted significant smoke from the structure as they were traveling to the scene. Upon arrival, the BC3 vehicle was positioned on West Belvedere Avenue, adjacent to the BC5 vehicle. The first MAYDAY was declared immediately upon their arrival at 1549 hours, 8 minutes and 27 seconds after the initial dispatch.

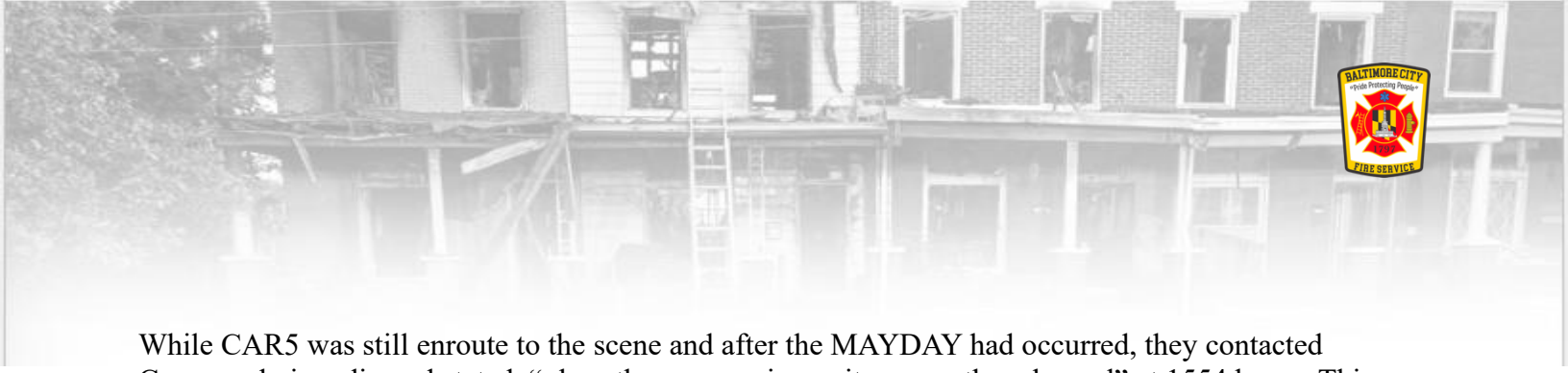
BC3 reported face-to-face to the IC to determine what his situation and needs were. The Incident Commander directed BC3 to assume Charlie Division and identify the needs on that side of the structure.

Charlie Division reported to the rear and noted significant fire in three homes. He reported that the smoke emitted straight in the air with minimal impact from wind. He also reported issues with power lines that were actively sparking. His primary focus was the deployment of attack lines to extinguish fire in the rear of the structure. Charlie Division also noted that the BC Tech assigned to him reported to the Alpha side to support the Incident Commander.

The IC advised Charlie during the MAYDAY operation that 2nd alarm units were coming and that he should use them as needed. Charlie continued to work on exterior extinguishment efforts, exposure access, and containing the fire to the fewest dwellings possible from the Delta side.

CAR5- SHIFT COMMANDER

CAR5 was automatically dispatched as part of the Working Fire response. They responded from quarters at 1100 Hillen Street, Baltimore, MD 21202, 6.5 miles from the incident. The Shift Commander and FOA responding as CAR5 on this incident were both working in their assigned roles and on their assigned shift. CAR5 was listening to the incident in his office. They left upon hearing the Working Fire request on the Fireground channel. They went enroute verbally on the Fireground channel at 1547 hours.



While CAR5 was still enroute to the scene and after the MAYDAY had occurred, they contacted Command via radio and stated, “place the suppression units on another channel” at 1554 hours. This was after several water-related transmissions occurred during MAYDAY operations. At 1555 hours Squad 40 accounted for all members from Engine 29. The IC continued operating on the same channel and conducted a PAR shortly after.

CAR5 arrived on scene 10 minutes after responding at 1557 hours. CAR5 announced their arrival on the Fireground channel just after the IC notified Fire Communications for the PAR to begin. Upon arrival, CAR5 reported to the Command Post on side Alpha and conferred with the Incident Commander about the Incident Action Plan. CAR5 executed a 360 degree walk around of the incident and continued to support command in an advisory role but did not state that on the radio.

CAR5 made transmissions throughout the incident, including BGE response request and “portable monitors to the rear.” CAR5 also informed the IC to get personnel in 5216 with lines and hooks. When interviewed, CAR5 stated the IC that ran the MAYDAY should not have continued commanding the incident after the firefighter rescues were completed. Two hours and 17 minutes passed from when the PAR was completed, and command was transferred from BC5. During interviews, CAR5 expressed reluctance to assume command to avoid burdening the Executive Command Staff and activating other divisions within the Department. CAR5 remained in a support role for the duration of the incident.

SAFETY OFFICER 4 – DISPATCHED AS THE INCIDENT SAFETY OFFICER

SO4 was dispatched as the Incident Safety Officer from quarters located at 15 S. Eutaw Street, which is in downtown Baltimore 21201, 5.7 miles from the incident. The route SO4 traveled, however, was 9.2 miles. This was done to access Interstate 83 due to traffic. The Officer working in the SO4 position was on overtime, out of his normal field assignment.

The unit took 2 minutes and 48 seconds to go enroute. SO4 arrived on the scene 19 minutes and 50 seconds after initial dispatch at 1600 hours. This placed their arrival after the MAYDAY was called and resolved. The PAR was announced as complete 38 seconds after SO4’s arrival.

MEDIC 11- NOT ON THE INITIAL DISPATCH, FIRST MEDIC TO ARRIVE

Medic 11 was writing an EMS report for a previous incident at University of Maryland Hospital in downtown Baltimore 6 miles away at 22 S. Greene Street when this incident was dispatched without an EMS Transport unit. The unit had one ALS and one BLS member. The ALS member was working on their shift and assignment. The BLS member was working overtime at their assigned unit.

Medic 11 was not in service, but they cleared the hospital to take this incident and went enroute 1 minute and 15 seconds after the initial dispatch. They were at the intersection of Pennsylvania Avenue and Fulton Avenue when the MAYDAY was transmitted, and they could see the plume of smoke enroute. They arrived on scene at 1555 hours, 12 minutes and 37 seconds after being added to the response. They arrived just as Squad 40 confirmed both members from Engine 29 were accounted for.

Upon arrival, M11 parked on W. Belvedere Avenue between Linden Heights Avenue and Nelson Avenue. They grabbed their stretcher and bag and went to the front of the building. They had to maneuver the stretcher over hose-lines to get there. They saw Captain Rinaldo awake, on the ground, talking to members that were providing him with care. They saw EMT/FF Pitts on the ground, surrounded by members doing CPR.

EMT/FF Pitts was placed on their stretcher and additional firefighters helped maneuver it over hose-lines to return to the medic. EMS5 and another EMS unit assisted in the back of the medic with the resuscitation efforts. Members noted difficulty removing turnout gear, even with one member using self-purchased, specialty Leatherman shears. They were unable to use the LUCAS device because of the turnout coat. EMT/FF Pitts remained in asystole throughout the resuscitation.

Medic 11 transported EMT/FF Pitts to University of Maryland Shock Trauma Center at 1611 hours, 16 minutes after arriving on scene. They arrived at the hospital at 1620 hours.

MEDIC 15- DISPATCHED ON THE RAPID INTERVENTION TASK FORCE, SECOND MEDIC TO ARRIVE

Medic 15 had just pulled into their station at 1503 W. Lafayette Avenue, Baltimore, MD 21217, 4.7 miles from the incident, when the RITF was dispatched at 1551 hours. They were listening to the Fireground channel prior to dispatch. Both members were working on their assigned unit. The BLS member was working on their shift. The ALS member was on overtime.

Medic 15 went enroute 21 seconds after RITF dispatch. While enroute, they discussed a plan for equipment and transport to University of Maryland Shock Trauma Center due to a likely multi-system trauma patient. They arrived on scene exactly 7 minutes after the RITF dispatch at 1558 hours.

Upon arrival, M15 parked 2 ½ blocks away, having to run with their stretcher and equipment over hose to the front of the building. They found Captain Rinaldo at the front of the building, appearing to have been just pulled out. A few firefighters helped move him to the stretcher and get to their unit, which they found had been moved 1 block away from where they had parked.

The firefighters that assisted with moving the stretcher returned to their units after Captain Rinaldo was placed in the back of M15. Medic 15 requested a driver several times verbally to officers on scene but did not receive one. The members of M15 were determined to stay off the radio because the PAR was being conducted, and they did not want to further burden the IC. They continued patient care and transport of Captain Rinaldo alone.

Medic 15 went enroute to University of Maryland Shock Trauma Center at 1605 hours, 7 minutes and 46 seconds after arriving on scene. While enroute, turnout gear removal was attempted but unsuccessful. Captain Rinaldo remained conscious during the transport, receiving ALS medical treatment. He would not tolerate airway interventions except for synchronous Bag Valve Mask (BVM) ventilations.

M15 arrived at Shock Trauma at 1616 hours, 11 minutes and 30 seconds after leaving the scene. Captain Rinaldo went unconscious in the hospital elevator just prior to transfer of care.

EMS5- SECOND ALARM DISPATCH, FIRST EMS OFFICER TO ARRIVE

EMS5 was in station at its quarters at 5502 Reisterstown Road, Baltimore, MD 21215, 0.5 miles away from the incident when it was dispatched. Despite not being assigned on the initial alarm, EMS5 switched to the Fireground channel and listened to the incident, knowing that he would be dispatched if a second alarm was called. The officer was working in his normal assignment and shift.

EMS5 heard the MAYDAY and was dispatched when the second alarm was called at 1552 hours. He went enroute 5 seconds after dispatch and arrived on scene 3 minutes and 4 seconds later. Upon arrival EMS5 donned his turnout gear and walked to the scene. He saw members doing CPR on EMT/FF Pitts as he was being moved to the stretcher of M11.

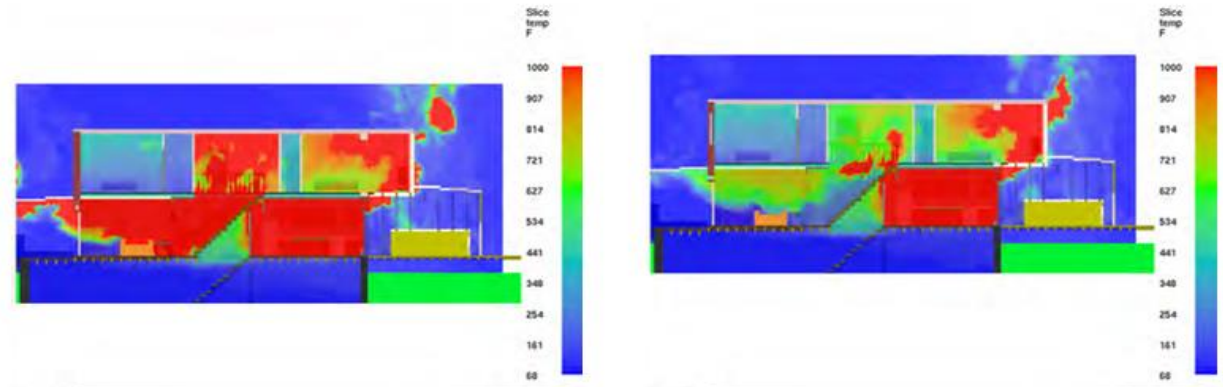
EMS5 ensured CPR continued as EMT/FF Pitts was moved to M11 and assisted with the resuscitation efforts upon arriving at the unit. He transmitted on the radio that he was working with M11 and notified BCEMS face-to-face of same. He assisted with care of EMT/FF Pitts until the transfer was complete at the University of Maryland Shock Trauma Center.

SUMMARY OF FIRE MODELING – U.L.; Fire Safety Research Institute

The Fire Safety Research Institute (FSRI), part of UL Research Institutes (ULRI), worked with the IR Team to provide an analysis of the incident. Specific focus was on fire dynamics, structural firefighting PPE, and firefighting tactics. This analysis is based on data from the incident, materials testing, computational fluid dynamics (CFD) modeling, and documented research results. A CFD model, the Fire Dynamics Simulator, was used to develop a simulation of the incident with ventilation, fire suppression, and fuel load as independent variables. Significant findings from the CFD model include:

- Captain Rinaldo and EMT/FF Pitts were likely exposed to temperatures in excess of 1000 degrees Fahrenheit.
- There was little to no impact of wind on the incident.
- Opening the front door created ventilation for a vent-limited fire, which increased the temperature.
- While these things are beyond the control of the fire department, the home furnishings and fuel load added to the intensity of the fire.
- Water flow from inside the front door, using a “flow and move” technique would have reduced the thermal exposure to members.
- Water flow from Side Charlie exterior of the dwelling would have reduced thermal exposure to members.

The IR Team used FSRI’s analysis to assist with policy and training recommendations involving risk assessment, the thermal limitations of structural firefighting PPE, and the "flow and move" fire suppression tactic.



Left image depicts likely temperatures without the flowing of water, while image on right is with water.

The full FSRI report is accessible here: https://doi.org/10.60752/102376.28723049

SUMMARY OF THIRD-PARTY PPE EVALUATION

Baltimore City firefighters operate in some of the most perilous environments, facing extreme heat, smoke, and other physical threats. Their first line of defense in these situations is their Personal Protective Equipment (PPE).

While each of the five injured members of the BCFD suffered damage to their gear, both Capt. Rinaldo and EMTFF Pitt's gear suffered extreme destruction. Due to the nature of the damage, the Linden Heights IRT utilized a third-party vendor to evaluate their gear, as well as anyone who suffered thermal injuries as a result while operating on the incident.

The vendor found that all gear utilized by the injured members was NFPA compliant. However, there were several components that were noted that should be addressed. Specifically, the coverage offered by the utilization of the helmets ear flaps and the presence of severed/broken chinstraps because of the incident. The third-party evaluator drafted a letter to NFPA addressing the concerns found with the compliant equipment.

The full 3rd party turnout report is accessible here:

https://s3.amazonaws.com/baltimorecity.gov.if-us-east-1/s3fs-public/2025-04/bcfd_firefighter_ppe_investigation_report_final_2025-03-26_with_appendices.pdf

SUMMARY OF THIRD-PARTY SCBA EVALUATION

The self-contained breathing apparatus (SCBA) is often referred to as a firefighter's lifeline during interior firefighting. The SCBA of Firefighter Pitts and Captain Rinaldo were heavily damaged because of this incident. Due to the nature of the damage, the IR Team utilized a third-party vendor to evaluate the SCBA.

The vendor found that the SCBA used by both members had satisfactory historical maintenance repair worksheets, with no shortage of documentation. Both members were breathing air when the event occurred.

Inspection of the SCBA revealed thermal damage to multiple parts of the SCBA, including severe damage to the facepiece lens and emergency breathing safety system (EBSS) hose, either of which would have resulted in an uncontrollable loss of air. In addition, numerous components of the SCBA harness, straps and backplate were found separated, frayed and distorted as a result of the fire event.

The 3rd party evaluation identified the following recommendations:

- Transitioning to the 2018 NFPA standard Draeger SCBA has now incorporated a higher temperature facepiece, which is a positive improvement from the previous model.
- The BCFD should train on the SCBA and EBSS to ensure members have awareness of the vulnerability of the current model.
- The BCFD should inquire about possible solutions to protect the EBSS while the BCFD transitions to the newest standard SCBA. According to the manufacturer, this will likely have additional EBSS protection, but the NFPA Standard is not yet released.
- The third-party evaluator drafted a letter to NFPA addressing the concerns found with the compliant equipment.

The IR Team has used this 3rd party evaluation in drafting related recommendations.

The full 3rd party SCBA report can be found here:

https://s3.amazonaws.com/baltimorecity.gov.if-us-east-1/s3fs-public/2026-02/bcfd_firefighter_ppe_investigation_report_corrected_final_2025-08-08_2.pdf

FINDINGS & RECOMMENDATIONS

OVERVIEW

The Findings and Recommendations of the IR Team are organized into seven major action categories. These categories recognize and expand upon the traditional NIOSH causal factors while accommodating additional, common themes that were discovered on this incident.

The categories are:

- Policy
- Command & Accountability
- Training
- Communications
- Staffing
- Human Performance
- Equipment

Recommendations are color coded to indicate the IR team's perception of severity.

- Red for recommendations that should be considered Immediate.
- Yellow for recommendations that are Concerning, but not as immediate.
- Green for recommendations of previous existing items that proved to be a Strength.
- Items that start as Red or Yellow and are described as Green were corrected **AFTER** the incident but prior to the publishing of this report.

Each recommendation includes a discussion of the FACTS surrounding the incident. The FACTS also include any support for the recommendation that exists, either through published NFPA recommendations, field literature review, or best practices from other fire departments.

Each recommendation also addresses previous BCFD LODD reports that have made a similar reference.

COMPARISON OF FINDINGS FROM PREVIOUS REPORTS

On the following page is a chart that compares a common list of recommendations from significant BCFD reports over the last 20 years. The reports listed include Line of Duty Deaths, near-misses that resulted in significant injuries, and the FACETS report, a third-party evaluation of the BCFD.

The same chart was used in the Stricker Street Report, page 110, with one exception: there were previously no improvements specifically identified over the 20-year span. In the brief, 21-month period that occurred from January 2022 to October 2023, the BCFD made great strides in either improving or permanently correcting several of the findings from the Stricker Street report. That is a testament to the effort of the members of the BCFD who worked diligently to enact necessary change. These improvements are identified in the "Status of Finding" with the following symbols:

- **X- Recommendations that were listed in that report.**
- **C- Recommendations that have been permanently corrected through policy and practice.**
- **I- Recommendations that have seen a correction, but are incomplete, most often due to lack of funding and/or permanence.**

COMPARISON OF FINDINGS FROM PREVIOUS REPORTS (*continued)*

Consolidated List of Findings	Linden Heights LODD-2 Members October 19, 2023	Stricker Street LODD-3 Members January 24, 2022	FACETS Report November 2021	Glover Street Near Miss February 27, 2019	North Avenue LODD Safety Officer November 12, 2014	Liberty Heights Near Miss April 7, 2010	East Avenue Near Miss January 15, 2010	Calverton Rd LODD-Recruit February 9, 2007	Macon Street LODD-October 10, 2006
Incident Command Technician	I	X	X	X	X	X	X		X
Radios-Capability, Accountability	I	X		X		X	X	X	X
Incident Command Post	C	X		X	X	X	X		
Accountability (including electronic)	I	X	X	X	X		X		
Staffing	X	X	X		X	X	X		
RIT Training	I	X	X		X	X	X		
Operational Risk Assessment	X	X	X		X		X		
Safety Officer	I	X	X		X				X
Vacant Building Inspection, notification &, marking	C	X	X	X	X				
MAYDAY/RIT Roles & Responsibilities	X	X	X	X			X		
Professional Development Training	I	X		X	X		X		
Incident Command Advisory Role	X	X		X	X				
Empowerment		X	X					X	
SOC/ Specialized Resources Training		X	X						
Thermal Imaging Camera Training	I	X					X		
After Action Review	X	X		X		X	X		
Human Performance Training	I	X							

CAUSAL FACTOR: POLICY

INTRODUCTION

The Internal Review Team conducted a thorough investigation of the applicable policies and procedures of the BCFD as it relates to this incident. This comprehensive review revealed both successes and areas requiring attention, providing a path for future progress. Some policies identified require updating, while other items need initial policy development.

The BCFD has shown immediate responsiveness in adjusting policy as a result of this incident. These adjustments are evidenced by highlighting the item in RED or YELLOW and then adjusting the Description to GREEN.

SUMMARY OF RECOMMENDATIONS

A description of the specific facts relating to Policy with recommendations follows. Here is a summary of recommendations for the Policy section:

ITEM	SUMMARY	DESCRIPTION
Policy #1	Engine Operations	Adjust MOP 602-1 to delete the 6th engine as Accountability and reflect the current practice of using the Battalion Tech.
Policy #1	Engine Operations Training	Continue Engine Operations training on MOP 602-1 for officers and members as it relates to FIRE ATTACK – Deployment of Hose-Lines and Nozzles.
Policy #2	AVL Dispatch	MOP 601-3 is a strength because it allowed BC5 to add the closest units as they became available.
Policy #2	AVL Dispatch	Update MOP 601-3 to allow members the ability to specifically be replaced on non-emergency responses for box alarms or higher acuity emergency calls through the BC or FCB Liaison (when applicable)
Policy #3	Safety Officer	MOP 602-4 is updated to reflect changes implemented by Ops Memo 15-22 and current practice. This update includes a provision for when a Shift Safety Officer is not available.
Policy #4	MAYDAY Procedures	Update MOP 602-13 to include two (2) additional items: • Include the "Who, What, Where" acronym for the member calling the MAYDAY. • Include establishment of a Medical Group or Branch in the "Actions by Incident Commander" when a MAYDAY is confirmed.
Policy #5	RIT Policy	Finalize and release the MOP for Pit Crew RIT. Ensure it includes the performance and skill requirements described in NFPA 1407 with follow through:

ITEM	SUMMARY	DESCRIPTION
		• Add the newly created MOP to the Training Days publication promulgated by the Fire Academy. • Once approved and released as policy, conduct Battalion Training including hands-on practice to ensure that all Battalions have received and understand the policy.
Policy #5	RIT Policy	Encourage members to take the Advanced Firefighter Removal course to further reinforce the concepts of the Pit Crew RIT policy.
Policy #6	After Action Review	MOP 631-4 was created to ensure the AAR process set forth in Operations Memo 01-25 is institutionalized.
Policy #6	After Action Review	All post-incident reviews are accessible to all members and announce when one becomes available for viewing.
Policy #7	Policy Review Process	Establish an annual review schedule to include the MOPs and CAD response profiles and update as needed.
Policy #7	Policy Review Process	Establish a sunset period for Operations Memos that align with the review period.
Policy #8	Portable Radios	Develop a MOP for radio operations. This policy will include: • Donning and placement of the radio. • Reinforcement through training for both field members and recruits. Ensure each recruit has a portable radio that is required to be worn in the above-referenced manner for the duration of their time.
Policy #9	Physical Ability Testing	Create policy to ensure compliance with annual physical agility testing for all Operations positions.
Policy #9	Physical Ability Testing	Create and designate a qualified BCFD Health and Fitness Coordinator to create and administer physical performance tests, oversee a fitness training program, and coordinate Peer Fitness Trainers to reinforce the physical performance standards.
Policy #10	Professional Development	Reinstate minimum education and training requirements for the promotion of Deputy Chief and higher positions.
Policy #10	Professional Development	Enhance the BCFD budget to compensate members for professional development and increase the staffing levels of each company to allow members the opportunity to attend formal training courses.

ITEM	SUMMARY	DESCRIPTION
Policy #10	Professional Development	Link national standards to local practices with training for current, new, and projected officers.
Policy #11	Risk Assessment	Update policy for initial company officer to include a more thorough risk assessment with latitude for deviation of standard running assignment.
Policy #11	Risk Assessment	Reinforce updated policy with training for current, new, and projected officers.
Policy #12	Performance Improvement	Implement a non-disciplinary operational performance improvement plan process for non-optimal performance that is separate from the PER.
Policy #13	Vacant Dwellings	The BCFD should continue the CODE-X Survey program to ensure not only dangerous building marking, but also area familiarity.
Policy #14	Execution of Recommendations	The BCFD should continue communication with IR Team members to ensure accurate implementation of recommendations.

CAUSAL FACTOR: POLICY #1 – ENGINE OPERATIONS

Summary: MOP 602-1: FIREGROUND OPERATIONS STANDARD OPERATING PROCEDURE-ENGINE/SQUAD should be corrected for 6th engine and updated and followed for large volumes of water for fire attack.

MOP 602-1

FACTS:

MOP 602-1 provides the standard operating procedures for engine companies based on their dispatch order. The policy provides clear direction for officers and members. It was modified in June 2022 to add a sixth engine/squad to be designated as an Accountability Unit. This is outdated language because the accountability role is now assigned to the Battalion Technician and has been since the Pilot Program started for the position in December of 2022 (Ops Memo 14-22).

MOP 602-1 states under FIRE ATTACK- Deployment of Hose-lines and Nozzles: "Where a fire has gained considerable headway and the cooling effect of large volumes of water is required, 2½" attack lines should be placed in service immediately as initial attack lines." This was not followed by Engine 46 or Engine 44. Both units pulled 1 ¾ inch pre-connect lines. The line selection was made after command reported heavy fire in the rear of the dwelling.

After the incident, in March 2024 all engines had their 2 ½ in pre-connect attack lines replaced with lightweight, 2" hose that "is capable of delivering targeted flows of 210-300 GPM with up to 30% less weight when compared to the current 2 ½" hose. This hose offers superior maneuverability, lower weight, increased flexibility, high kink resistance, and low friction loss" (BCFD Bulletin Dated March 19, 2024).

The hose replacement was reinforced with an educational Bulletin and Training Manual update. In October 2024 the Fire Academy started an on-duty Engine Operations class for field members. One objective of this course is deploying and maneuvering the new 2" hose which ensures members have first-hand knowledge on the value, function, and limitation of the hose.

RECOMMENDATIONS:

1. Adjust MOP 602-1 to delete the 6th engine as Accountability and reflect the current practice of using the Battalion Tech.
2. Continue Engine Operations training on MOP 602-1 for officers and members as it relates to FIRE ATTACK – Deployment of Hose-Lines and Nozzles.

PREVIOUS REPORT(S):

- Stricker St. P. 154
- Macon St. #4, #9
- Glover St.

REFERENCES:

- BCFD MOP 602-1: FIREGROUND OPERATIONS STANDARD OPERATING PROCEDURE-ENGINE/SQUAD
- BCFD Operations Memo 14-22: Battalion Technician Position Pilot Program
- BCFD Bulletin Dated March 19, 2024: Mercedes Textiles KRAKENEXO SUPER IITM 2" Hose - Replacement of 2 ½" Hose

CAUSAL FACTOR: POLICY #2 – AVL DISPATCH

Summary: Policy- MOP 601-3: AVL DISPATCH is a strength because it allowed the IC to add closer available units, but it needs updated to allow autonomy for non-emergency calls.

MOP 601-3

FACTS:

Companies were dispatched from out of position from their normal assignments for a box alarm in this geographic area. This was largely due to the dispatch of lower acuity EMS calls, as well as a non-emergency lift assist (Truck 18). This caused the dispatch assignment to have the truck companies which would normally not be even on the second alarm to be on the initial dispatch, which lead to lack of familiarity with the area and personnel operating.

MOP 601-3 allowed BC5 the decision-making ability to add companies not initially dispatched after verification of location. This proved to be a strength within the incident as these units played a pivotal role in the removal of our members.

RECOMMENDATIONS:

1. MOP 601-3 is a strength because it allowed the BC to add the closest units as they became available. MOP 601-3 needs to be updated to remove the 6th Engine company as the 'accountability unit' as our tactics have changed to give this responsibility to the Battalion Technician. The BC Tech position proved to be a strength within the operation of the incident as they were able to have positive influence over a dynamic incident through accountability, victim tracking and overall logistics. This assisted the Incident Commander in being able to take a more singular role of managing the incident and MAYDAY and not being task saturated with the many components of managing a fire of consequence.
2. Update MOP 601-3 to allow members the ability to specifically be replaced on non-emergency responses for box alarms or higher acuity emergency calls through the Battalion Chief or FCB Liaison (when applicable).

PREVIOUS REPORT(S):

- Macon St. #8

REFERENCES:

- BCFD MOP 601-3 – AVL DISPATCH

CAUSAL FACTOR #3 – SAFETY OFFICER

Summary: Update MOP 602-4 FIREGROUND OPERATIONS RADIO COMMUNICATIONS PROCEDURES to reflect current practice with the addition of the 2nd shift Safety Officer position.

FACTS:

The Incident Safety Officer is an essential role that must be established on all incidents involving IDLH in accordance with National Incident Management System and NFPA 1561, 2020. Furthermore, NFPA 1710, 2020, 5.2.2.3 states that an Incident Safety Officer must be established on any incident where "significant risk is present".

In December 2022, Operations Memo 15-22 was released. This Ops Memo established the Safety Officer 4 (SO-4) position as a supplement to the existing Safety Officer 2 position (SO-2). The duties of the dispatched Safety Officer include, but are not limited to, responding on all 1st alarm and Hazmat assignments and will assume Incident Safety upon their arrival. On 1st Alarm Box Assignments, the 2nd dispatched Battalion Chief will no longer be required to assume Incident Safety and can assume Charlie Division Supervisor upon their arrival.

When this incident occurred MOP 602-4 did not match the current practice of using the Safety Officer position in the Incident Safety role. It still used the Battalion Chief because it was written before the 2nd safety officer was created. In October 2025 MOP 602-4 was updated to match current practice. It also now has a provision for when a Safety Officer is not available.

RECOMMENDATION:

1. In October 2025, MOP 602-4 was updated to reflect the changes implemented by Ops Memo 15-22 and current practice. This update included a provision for when a Shift Safety Officer is not available.

PREVIOUS REPORT(S):

- Calverton Rd. P. 73
- Glover St.
- Macon St. #6

REFERENCES:

- BCFD MOP 602-4: FIREGROUND OPERATIONS RADIO COMMUNICATIONS PROCEDURES
- Operations Memo 15-22: Safety Officer 4, dated December 16, 2022
- NFPA 1561: Emergency Services Incident Command System and Command Safety, 2020 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, 2020 Edition. In *NFPA Codes and Standards Online. Retrieved from https://www.nfpa.org/codes-and-standards*

CAUSAL FACTOR: POLICY #4 – MAYDAY PROCEDURES

Summary: MOP 602-13: MAYDAY is a strong policy, and it was followed. It should be updated to include the "who, what, where" acronym as the initial transmission for calling a MAYDAY. It also needs to be updated to ensure the IC establishes a Medical Group Supervisor during an active MAYDAY.

MOP 602-13

FACTS:

MOP 602-13 is a sound policy for transmitting and managing a MAYDAY. It describes how to call a MAYDAY using the LUNAR acronym and what actions to take afterward. It also gives direction to Incident Commanders, Rescue Group Supervisors, and Fire Communications Bureau on how to appropriately respond to a MAYDAY.

Engine 29's Officer made two MAYDAY calls. The first call he accidentally identified himself as Engine 46, which is his assigned unit. He was working overtime at Engine 29. The second call he identifies the correct unit as Engine 29 and provides his location on the first floor. 17 Seconds later he states he "can't get out". In these transmissions Engine 29's officer provides critical "who, what, where" information for Incident Command. He does not provide a formal LUNAR.

The "who, what, where" checklist for a MAYDAY call is a best practice recognized by similar Fire Departments that have experienced MAYDAY incidents (Bashoor, 2022). In a stressful situation, proving the basic answers to who, what, where is more instinctive. This proved to be the case for Captain Rinaldo. The LUNAR acronym can be used to provide supplemental information as time allows. The BCFD is already encouraging the use of "who, what, where" in annual bailout training. Updating the MOP would ensure the policy matches the current practice.

MOP 602-13 requires a Medic to be called for the downed members during a MAYDAY. This was done for both members. When the member is a higher acuity patient, an EMS officer and suppression company may be needed to assist with patient care and transport. This was the case for EMT/FF Pitts. Medic 15 transported Captain Rinaldo. Medic 15 did not have a suppression company or EMS Officer to assist them with care and transport. They did not ask the IC for assistance due to radio traffic and incident complexity. Medic 15 asked other officers on the incident for help face-to-face, but none of

those officers provided a driver which they needed. The MOP should account for this predictable need, but it currently does not.

A Medical Group Supervisor would ensure all transport units receive the assistance they need. Establishing a Medical Group Supervisor should be included in the "Actions by Incident Commander" of the MOP. Medical Group Supervisor actions should include ensuring treatment and transport assistance is provided for EMS transport units. This is consistent with NIMS terminology and will assist the IC with incident span of control. The Medical Group can expand to a Medical Branch if the incident conditions dictate.

RECOMMENDATION:

1. Update MOP 602-13 to include two (2) additional items:
• Include the "who, what, where" acronym for the member calling the MAYDAY.
• Include the establishment of a Medical Group or Branch in the "Actions by Incident Commander" when a MAYDAY is declared.

PREVIOUS REPORT(S):

- North Ave. C1
- Glover St.

REFERENCES:

- BCFD MOP 602-13: MAYDAY
- Bashoor, M. (2022, January 19) *MAYDAY Survival guide: MAYDAY Checklist to Organize your Fireground.* Retrieved from: https://www.firerescue1.com/mayday-survival-guide/articles/download-this-mayday-checklist-to-organize-your-fireground-ops-bFtXOiBGcbIDoSgp/

CAUSAL FACTOR: POLICY #5 – RIT PROCEDURES

Summary: The BCFD does not have a position-specific policy for RIT team operations, i.e. the Pit Crew concept.

FACTS:

Engine 52 as the RIT company was walking up to the fireground when the MAYDAY was transmitted. Engine 52's members did not obtain the RIT bag and equipment prior to a MAYDAY being transmitted.

A Pit Crew approach to RIT is akin to the pit crew concept for CPR, wherein each member has specific duties and responsibilities during CPR to maximize its effectiveness. The Pit Crew concept for RIT operations creates a more streamlined approach to RIT preparation and deployment. It delineates specific duties for each member and greatly assists in maintaining accountability of equipment and job functions during Mayday situations.

No policy currently exists for Pit Crew RIT operations. However, the BCFD has been training members in the advantages of accountability for individual tasks during MAYDAY operations through the Advanced Firefighter Removal course. The BCFD has conducted this course 7 times since May 2023, having trained 150 members so far. The department also maintains a cadre of instructors for this course.

Additionally, there are several individual fire suppression units within the department who have already incorporated the Pit Crew RIT concept into their daily operations. This is because unit officers have taken it upon themselves to implement it.

NFPA 1407: Standard for Training Fire Department Rapid Intervention Crews, 2020, describes required performance and skills for RIT units. This should serve as a guideline for policy development.

The BCFD has a MOP Committee that works to develop policies. The MOP Committee drafted the PIT CREW RIT policy as MOP 602-8-1: RIT ASSIGNMENTS and it was publish in May 2025 as a new policy.

RECOMMENDATIONS:

1. Finalize and release the MOP for Pit Crew RIT. Ensure it includes the performance and skill requirements described in NFPA 1407 with follow through:
• Add the newly created MOP to the Training Days publication promulgated by the Fire Academy.
• Once approved and released as policy, conduct Battalion Training including hands-on practice to ensure that all Battalions have received and understand the policy.
2. Encourage members to take the Advanced Firefighter Removal course to further reinforce the concepts of the Pit Crew RIT approach.

PREVIOUS REPORT(S):

- Calverton Rd. P. 77
- North Ave. D1

- Striker St. P. 131
- Liberty Heights #8

REFERENCES:

- NFPA 1407: Standard for Training Fire Department Rapid Intervention Crews, 2020 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards

CAUSAL FACTOR: POLICY #6 – AFTER ACTION REVIEW

Summary: The BCFD should develop a policy to ensure all Working Fires and greater, receive an objective review that is accessible to all members with an announcement when it becomes available.

FACTS:

NFPA 1500 requires fire departments to conduct post-incident analysis on all incidents involving serious injury or death of a firefighter. The BCFD requires post-incident analysis (PIA) to be conducted when a MAYDAY occurs per MOP 602-13: MAYDAY. This is the only type of incident that requires PIA in BCFD policy. General practice allows the Shift Commander to require PIA to be conducted on fires reaching 2nd alarm or greater, incident of a high risk-low frequency, like Hazardous Materials, as well as fires where a significant injury occurs. This general practice is not in a written policy, and therefore not uniformly applied across the four (4) shifts. These PIAs are uploaded on BCFD Word Forms, where all members can view them. The uploads are sporadic, and do not include all PIAs that have been written.

The BCFD has a post-incident analysis template for when the Shift Commander orders a report to be completed but it is inadequate. It is vague, only listing section headings for the writer. The writer, most often the Battalion Chief that was the Incident Commander, must write numerous paragraphs in a NIOSH-style paper. There are no pre-filled options with drop-down selections. This open-ended writing is time consuming and does not support objectivity in fireground assessment.

The final document is then shared on BCFD Word Forms. Anecdotal evidence through teaching Fire Officer courses shows that members are unaware that this historical PIA folder exists. Furthermore, the folder has gaps of missing reports, and it is not announced when a report is added. This process was adjusted in September 2024. PIAs from September and October 2024 were added to this folder with email correspondence to members notifying them of same.

The BCFD Office of Safety and Risk Management, through the Incident Safety Officer started conducting their own after-action review with a pre-filled form in September 2024. This was in response to gaps in data collection on incident injuries. This review is a step in the right direction, as it is relatively easy to complete, but it is not as thorough as it could be. It fails to document basic fireground functions like water supply and handline selection. Its focus is more on safety-related issues on the fireground. Furthermore, it is not shared department wide.

In January 2025 Operations Memo 01-25: After Action Reviews was released, introducing a new form and process for formal After-Action Review (AAR). This process seeks to evaluate 2nd alarm or greater incidents, as well as anything designated by Operations to identify strengths and weaknesses for the purpose of improving. The new form used is an improvement from the PIA document because it allows for drop-down responses and narrative responses. Final AARs are shared department wide as an email attachment and also stored on an electronic share file. This process is not yet institutionalized through a BCFD MOP update.

The Linden Heights incident showed a wide range of performance for BCFD members as outlined in this report. The incident had basic operational mistakes, like apparatus placement. It also had heroic risk under highly stressful, hostile fire conditions to locate our downed members. The reason we can capture

these performances is because we are reviewing the incident. The BCFD should analyze smaller scale incidents, capturing successes and areas of improvement to institutionalize performance improvement.

In October 2025 MOP 631-4: AFTER ACTION REVIEWS was published. This has now institutionalized the AAR process from Operations Memo 01-25.

RECOMMENDATIONS:

1. MOP 631-4 was created in October 2025 to ensure the AAR process set forth in Operations Memo 01-25 is institutionalized.
2. Ensure all post-incident reviews are accessible to all members and announce when one becomes available for viewing.

PREVIOUS REPORT(S):

- Calverton Rd. p. 72
- Glover St.
- East Ave. #13
- FACETS p. 86

REFERENCES:

- BCFD MOP 602-13: MAYDAY
- NFPA 1500: Standard on Fire Department Occupational Safety, Health, and Wellness, 2021 Edition, Chapter 4 (4.1.4). In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- Operations Memo 01-25: After Action Reviews Dated January 10, 2025
- MOP 631-4: AFTER ACTION REVIEWS

CAUSAL FACTOR: POLICY #7 – POLICY REVIEW PROCESS

Summary: Numerous Manual of Procedures (MOPs) need to undergo review and/or updating.

FACTS:

During the review process, it was found that numerous MOPs, specifically in the 500 series on Communication and the 600 series on Operations, need updating.

BCFD Operations historically updates members with changes by Operations Memos and Bulletins when an operational item is time sensitive. This is because it takes time for MOPs to get updated. All stakeholders beyond Operations must consult to write an MOP, including Labor Unions and other Divisions. It is also because some items are pilot programs and under evaluation, not ready for set policy yet.

The consequence of operating from Operational Memos is that they are not studied for promotional exams. They are also stored by number and year, not by subject. This makes their reference difficult. Traditionally an operations Memo has been considered policy unless rescinded. This means that an officer could be held accountable for an Operations Memo that was released before they were promoted or even hired.

Best practices as well as NFPA 1500, Chapter 4 (4.1.4) state that an organization's policies and procedures should, at a minimum, undergo a yearly evaluation and be updated as needed. Several MOPs are outdated, obsolete and/or conflict with current CAD (Computer Aided Dispatch) response profiles.

RECOMMENDATIONS:

1.	Establish an annual review schedule to include the MOP's and CAD response profiles and update as needed.
2.	Establish a sunset period for Operations Memos that align with the review period. This will ensure members can reference the MOP for current policies within the review schedule.

PREVIOUS REPORT(S):

- Glover St

REFERENCES:

- BCFD Manual of Procedure- 500 Series (Communications)
- NFPA 1500: Standard on Fire Department Occupational Safety, Health, and Wellness, 2021 Edition, Chapter 4 (4.1.4). In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards

CAUSAL FACTOR: POLICY #8 – PORTABLE RADIOS

Summary: The BCFD does not have a policy dictating the donning and placement of portable radios and Remote Speaker Microphone (RSM) when operating on incidents.

FACTS:

Both Captain Rinaldo and EFF Pitts suffered significant damages to their portable radios while operating at 5210 Linden Heights Ave. Both radios were worn utilizing a leather sling with the RSM exposed. Lt. Rinaldo's radio was worn in a sling, *under* his personal protection ensemble (PPE) jacket while FF Pitt's was worn in a sling, *over* his PPE jacket.

While both radio units suffered severe thermal damage, Capt. Rinaldo's radio remained functional for the duration of the incident. EFF Pitt's radio RSM cord suffered a complete failure detaching into two separate pieces. As has been documented in other firefighter injuries both regionally and nationwide, when EFF Pitt's RSM failed, it caused the radio to short in the open transmission position, temporarily hampering communications.

During research conducted in neighboring Fairfax County, Virginia (*Portable Radio Placement in the IDLH,* 2013), as well as extensive testing conducted through the NIST (NIST Technical Note 1477, *Testing of Portable Radios in a Firefighting Environment*), the RSM is reported as the weakest or least protected part of the portable radio. *"When the RSM melts, the braided wires often get exposed and short the radio in the open position. This may result in a loss of functionality for the individual user or cause the RS to short in such a way that the affected radio transmits continuously, creating an open mic situation, therefore jamming all communications on the fire-ground"* (FFXFRD, 2013).

Currently, the BCFD PPE specification offers a "radio pocket" located on the left chest of the jacket as shown below:

This position only offers minimal abrasion protection of the radio; however, it does not protect the RSM and cord from thermal properties. Additionally, this radio positioning is reliant on the Velcro flap as the sole means of securing the radio to the user. During recent BCFD Advanced Firefighter Removal Course training, a large majority of firefighters who utilized the radio pocket lost their radio during inverted bailout procedures or window hangs. Additional findings cited that the RSM cord is prevalent to get caught during entanglement hazards.

RECOMMENDATION:

1. Develop an MOP for portable radio operations. This policy will include:
• Donning and placement of the radio
• Reinforcement through training for both field members and recruits
• During initial training conducted for recruits at the Fire Academy, ensure each recruit has a portable radio that is required to be worn in the above referenced manner for the duration of their time.

PREVIOUS REPORT(S):

- Calverton Rd, P. 63
- Stricker St. P. 135

REFERENCES:

- FFXFRD, 2013, *Portable Radio Placement in the IDLH* access at: Portable-Radio-Placement-IDLH.pdf Fairfax County, Virginia

CAUSAL FACTOR: POLICY #9 – PHYSICAL ABILITY TESTING

Summary: The BCFD does not have a policy to comply with EMT Firefighter job requirement for annual physical ability evaluations for all members in Operations. The BCFD should create and designate a qualified BCFD Health and Fitness Coordinator to create and administer physical performance tests, oversee a fitness training program, and coordinate Peer Fitness Trainers to reinforce the physical performance standards.

FACTS:

A career in the fire service requires its members to maintain a level of physical fitness. This fact becomes more apparent when members are called upon to perform a MAYDAY Operation. It takes an extensive amount of physical effort and strength under these extraordinary circumstances to execute the rescue of a firefighter wearing turnout gear. To their credit, members directly involved in the Linden Heights MAYDAY Operation were able to meet the expectation under extreme direst resulting in the extrication of both members in under 4 minutes.

The Baltimore City Fire Department does not currently have a policy in place to evaluate its members against minimum physical fitness performance standards throughout their careers. Upon review of the job description for EMT Firefighters hired after January 1, 2016, it states that members hired are REQUIRED to meet “physical performance standards as measured by periodic physical performance tests upon appointment and throughout their length of service in the Baltimore City Fire Department or be subject to termination.” One group of EMT/FFs completed a physical ability test in 2017 after returning to the Fire Academy from riding medic units for approximately 6 months. This was the only time a test of this nature was conducted. Otherwise, no such policy or practice exists to administer these periodic tests.

The BCFD launched a Health and Wellness Initiative in 2011, featuring a Health and Wellness Coordinator and Peer Fitness Trainers. The program's purpose was to provide participants with information about their current health and fitness levels, as well as areas for improving their personal wellness. The initiative aimed to create a comprehensive summary to help the department identify priorities for future fitness educational programs, with the goal of implementing an On-Duty Physical Training Program.

The BCFD Health and Wellness Initiative is no longer active. When the member that held the coordinator position separated from the BCFD in 2013 they were never replaced. The BCFD trained 14 members in the Peer Fitness Certification in 2012. All but one member that attended this class have either separated from the BCFD or did not maintain their bi-annual recertification process. A new pool of PFTs is needed.

RECOMMENDATIONS:

1. Create a policy for Physical Performance Tests for BCFD employees of all ranks and reflect same in all job postings assigned to Operations.
2. Create and designate a qualified BCFD Health and Fitness Coordinator to:
• Administer physical performance testing
• Oversee an exercise and fitness training program in accordance with NFPA 1583 (see Training #4)
• Coordinate Peer Fitness Trainers to assist with health and fitness programs that can reinforce consistent physical performance standards for recruits and field members (see Training #4)

PREVIOUS REPORT(S):

- Calverton Rd. P. 116

REFERENCES:

- BCFD Job Announcement: EMT/Firefighter Dated June 2, 2023
- Bulletin: Wellness Program- Health Fitness Coordinator, Dated June 1, 2011
- NFPA 1580 Standard for Emergency Responder Occupational Health and Wellness (new 2025)
- NFPA 1583 Standard on Health-Related Fitness Programs for Fire Department Members, 2022
- NFPA 1582 Standard on Comprehensive Occupational Medical Programs for Fire Departments, 2022
- General Order 72-11 Subject: Health and Wellness Program Dated August 15, 2011

CAUSAL FACTOR: POLICY #10 – PROFESSIONAL DEVELOPMENT

Summary: MOP 110-3: OFFICER PROMOTION TEST EDUCATIONAL REQUIREMENTS does not specifically allow BCFD members the opportunity to acquire requisite formal training while on-duty or detailed out of their regular assignment. It also does not transition new officers from National Standard to BCFD Specific expectations. Revise the MOP to include training and education requirements for Deputy Chiefs and higher positions. Create or revise MOPs to allow members to be assigned to the training while on-duty, or to receive compensation while attending off-duty for mandatory formal training courses for professional development.

MOP 110-3

FACTS:

The BCFD has established promotional test requirements for its members to obtain before sitting for a promotional examination (MOP 110-3). The following Officer Promotion Test Educational Requirements were fully implemented on January 1, 2019:

PROMOTIONAL REQUIREMENTS

RANK: CURRENT REQUIREMENTS

Lieutenant: Fire Officer 1, Instructor 1, ICS 100, 200, 700, 800

Captain: All above, Fire Officer 2, ICS 300, 400, and 30 college credits

Battalion Chief: All above, Fire Officer 3, and 60 college credits (AA degree)

The policy covered the ranks of Lieutenant, Captain, and Battalion Chief. The original policy released in 2014 included educational requirements for Deputy Chief as well. It was revised on August 3, 2018, to remove the requirements for the rank of Deputy Chief and above. This means that members who were promoted to Battalion Chief prior to January 1, 2019, can promote to Deputy Chief without ever having completed any professional development. The Fire Academy provides and/or offers opportunities for BCFD members to obtain the necessary courses. However, it is the responsibility of the member to successfully complete all mandatory courses and to provide documentation of successful completion for promotional examinations. Any cost incurred or time utilized falls upon the personal responsibility of

the member. All courses will be attended on off-duty time whether they are attended on BCFD property, or off-site at another location of the member's choosing (MOP 110-3).

MOP 110-3 outlines the training levels for each BCFD Officer rank according to the United States Fire Administration's Fire and Emergency Services Higher Education (FESHE) Initiative. The policy mandates that members must undertake formal training off-duty. This requirement is outdated given current educational demands and familial obligations, making it incompatible with maintaining a strong workforce. Compensating employees for required training is essential for fair labor practices and contributes to the organization's overall success and health.

Training is an investment in the workforce's development and skills, benefiting the organization. Providing this benefit boosts morale and job satisfaction, demonstrating that the BCFD values its members' growth and invests in their future career advancement. This approach helps retain members and attract top talent nationwide. Providing compensation fosters a positive organizational culture, enhancing trust and respect between members and officers, and creating a more collaborative and motivated workforce.

NFPA 1550, Standard for Emergency Responder Health and Safety, paragraph 7.1.2, states, "The fire department shall provide training, education, and professional development for all department members commensurate with the duties and functions that they are expected to perform." Developing a professional development plan focused on furthering education without external distractions will result in well-versed public safety personnel.

The BCFD has conducted officer development training in addition to MOP 110-3 on two separate occasions within the last 10 years. The first was in 2015. This training covered awareness of other BCFD Divisions (Logistics, Fire Marshal, Fire Academy, etc.) as well as Operational topics. The target audience was new officers. This class performed incident simulations developed by Maryland Fire and Rescue Institute.

Officer Development training was developed again in 2021 and implemented in 2022 with grant funding. The target audience was ALL officers, including everyone from Acting members to Deputy Chiefs. This class also included awareness of other BCFD Divisions. The 2022 class used BCFD-specific command simulations for the operational component, as the department had already acquired the Sims U Share simulation program. FOCAS Lab became an extension of the simulation component of the 2022 Officer Development.

The BCFD has used Officer Development training to bridge the gap between National Standards and best practices to develop officers on all levels. Historically, participation in this training is not mandatory. It is also not permanently funded. These key benchmarks are required to ensure officers are prepared for the challenges they will face at the local level.

RECOMMENDATIONS:

1. Administer mandatory Officer Development Training for each rank of officer separately and include those on the current promotional lists and those that are approved to act in each position, should Acting Out of Title continue (see *Staffing #1)*. Training should focus on local, BCFD specific policies including the topic areas discussed in *Training #11*.
2. Reinstate minimum education and training requirements for the promotion of Deputy Chief and higher positions.
3. Enhance the BCFD budget to compensate members for professional development and increase the staffing levels of each company to allow members the opportunity to attend formal training courses.

PREVIOUS REPORT(S):

- Stricker St. P. 53
- FACETS P. 84

REFERENCES:

- BCFD MOP 110-3 OFFICER PROMOTION TEST EDUCATIONAL REQUIREMENTS
- NFPA 1550: Standard for Emergency Responder Health and Safety, 2024 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards

CAUSAL FACTOR: POLICY #11 – RISK ASSESSMENT

Summary: The BCFD should update MOP 601 to include a more thorough risk assessment to be performed by the first arriving unit officer on all incidents. Engine 29 followed the current policy, but it was insufficient in assessing the exact location and extent of the fire. An updated MOP with training for officers is needed to ensure officers have the tools they need to make and communicate the best tactical decisions.

MOP 601

MOP 601-6

MOP 602-1

MOP 602-18

FACTS:

The crew of Engine 29 was faced with a dwelling fire that had significant headway from the Charlie side of the structure prior to their arrival. This dwelling was occupied, and Captain Rinaldo had been to this block for Code X Vacant Surveys the day prior. BCFD MOP 601 dictates that the first unit officer completes a Brief Initial Report with unit identification, building description, conditions and assumes command. Captain Rinaldo completed this report. Per MOP 602-1, the first engine reports to side Alpha, stretches the appropriate attack line, and proceeds through the Alpha side to locate and extinguish the fire "unless conditions dictate a change". Despite this caveat, there is no indication in the policy examples of what conditions would warrant a change. Engine 29 followed policy with their initial tactics. Engine 29's tactics are based on BCFD standard practice and MOP 602-1.

Best practice for initial size-up would be to assess additional information before deciding to enter the dwelling from side Alpha. The BCFD recognizes this best practice in other MOPs, specifically MOP

602-18: BASEMENT FIRES and MOP 601-6 VACANT BUILDINGS. These two MOPs address additional size-up considerations that should be made prior to making an entry. These considerations include structural stability, obstacles to access/egress, conditions on side Charlie, and presence/access to stories below grade. This incident highlights the need to update BCFD policy to make a more thorough risk assessment on ALL structure fires, not just those that are vacant or below grade.

The BCFD recognizes in MOP 602-18: BASEMENT FIRES that when access to a below grade fire is found, every effort should be made to fight the fire on the same level, despite the side of the building. This is an example of an appropriate deviation from MOP 602-1 which requires communication to oncoming units. Best practices of similar jurisdictions indicate when a fire has spread to combustibles exterior of the structure, a reset of fire, or outside-in attack should be considered. This incident highlights an example of a deviation from standard assignment that should be added to BCFD policy.

In addition, BCFD engine companies do not utilize truck company tactics prior to entry, specifically removal of security bars. That task is addressed in MOP 602-8 for the RIT engine, and in practice it is completed by Truck Companies and/or Rescue 1. The presence of the security bars on the window of the first floor proved to be a severe hindrance to EMT/FF Pitts' egress. The window bars remained while the initial attack was taking place. In accordance with current BCFD policy, the first unit that would be responsible to size-up the building for firefighter egress in this incident type was Engine 52 as RIT. They had just arrived as MAYDAY was being declared. Both the Basement Fire and Vacant MOPs recognize security bars as egress considerations that should be addressed during initial assessment. This concern is not in MOP 601.

RECOMMENDATIONS:

1. The BCFD should update MOP 601 to ensure ALL structure fire size-ups include a thorough risk assessment mirroring what is currently described in MOP 601-6 VACANT BUILDINGS and 602-18 BASEMENT FIRES. The updated policy should also provide officers the latitude to make and communicate real time decisions both tactically and strategically even if they differentiate from the procedural confines of the MOPs. Examples of appropriate deviations like basement fires and outside-in fires should also be provided.
2. Operational policies should be reinforced with mandatory, BCFD-specific officer development schools for each rank of officer separately and including those on the current promotional lists and those that are approved to act in each position, should Acting Out of Title continue (reference *Staffing #1*). Training should include, at a minimum, simulations for risk assessment and decision making for well advanced fires, basement fires, vacant vs. occupied structures, new terminology (example: outside-in fire), deciding and communicating policy deviation, interpersonal skills for interaction with new personnel, and the potential removal of security devices prior to entry into a dwelling fire.

PREVIOUS REPORT(S):

- Stricker St. P. 119
- Glover St.

REFERENCES:

- MOP 601 Fireground Operations & Command
- MOP 601-6 Fireground Operations – Vacant Buildings
- MOP 602-1 Fireground Operations – Engine
- MOP 602-8 Rapid Intervention Team, 2 In 2 Out
- MOP 602-18 Basement Fires

CAUSAL FACTOR: POLICY #12 – PERFORMANCE IMPROVEMENT

Summary: The BCFD does not have a remedial, non-punitive process for improving substandard operational performance.

MOP 301

MOP 301-1

FACTS:

On this incident there were members that performed valiantly and optimally. There were cases noted during the inquiry completed by this committee, however, where some members performed below expected standards or MOPs. While it is not within the scope of the Review Team to highlight each example, the committee believes this is emblematic of a culture where this below standard behavior exists and requires others to compensate for the deficiencies of their actions.

The BCFD has a policy for substandard performance in MOP 301 and 301-1. It is viewed primarily as a disciplinary process, requiring reported members to be removed from the field, evaluated by a physician, and videotaped at the Fire Academy. MOP 301 was written before officers were required to also be trained instructors in accordance with MOP 110-3. That may explain why MOP 301 offers little to no remedial opportunities for the company officer to coach the member to improve their performance. In addition, the MOP offers little opportunity for the Battalion Chief to improve the Officers performance. This not only fails the OIC, but it fails everyone working under their command and thus, the entire system.

The BCFD does have a form for coaching. It is primarily used as a requirement of the Office of Safety and Risk Management for members after they suffer a line-of-duty injury. It is not currently documented in policy to use the Coaching form in a true coaching fashion, which would outline current performance with expected performance, and offer tools to bridge the gap.

The BCFD also has a Performance Improvement Plan as part of bi-annual performance evaluation reports in accordance with MOP 315-1. This plan is only completed for members that received an

overall score of 2.5 or less on a 1-4 scale: 1=unsatisfactory, 2=needs improvement, 3=meets expectations, 4=exceeds expectations. The performance improvement plan is rarely used, if ever, as there are 10 items (11 for supervisors) that can balance out the overall score, allowing a member that performs poorly operationally to still receive greater than 2.5.

RECOMMENDATION:

1. Implement an operational performance improvement plan process for non-optimal performance that is separate from the PER. This is non-disciplinary and solely based on creating a structure for the supervisor to coach a member to improve operational performance.

PREVIOUS REPORT(S):

- Calverton Rd. P. 90
- Glover St.

RESOURCES:

- BCFD MOP 110-3
- BCFD MOP 301, 301-1
- BCFD MOP 315-1

CAUSAL FACTOR: POLICY #13 – VACANT DWELLINGS

Summary: The BCFD should continue the CODE X Survey program to ensure not only dangerous building marking, but also area familiarity.

MOP 601-6

MOP 601-5

FACTS:

On October 18th, 2023, the day before the incident, the crew of Engine 46 conducted Code X Sweeps as part of a required, weekly evaluation of vacant structures per MOP 610-5. One of the blocks they visited in the 2-hour period was the 5200 block of Linden Heights Avenue. Captain Rinaldo was the Officer. He documented 3 vacant properties on that block and entered the findings into Fire Records upon returning to the station. One of the vacant properties was 5214 Linden Heights Avenue, 2 houses away from where this fatal fire occurred.

This incident did not involve a structurally dangerous vacant structure. But the procedure of looking for this type of structure within the community was still valuable. The process of evaluating a unit's response area for the stability of vacant structures reinforces the important activity of area familiarization. While canvassing and evaluating vacant structures, members became familiar with the overall area and are generally more equipped to respond to their community.

RECOMMENDATION:

1. The BCFD should continue the CODE_X Survey program to ensure not only danger buildings are identified and marked, but also for area familiarization.

PREVIOUS REPORT(S):

- North Ave. F1
- Stricker St. P. 114

REFERENCES:

- BCFD MOP 601-5: DOCUMENTING CODE-X AND DANGEROUS BUILDINGS
- BCFD MOP 601-6: CODE STRUCTURE MARKING SYSTEM

CAUSAL FACTOR: POLICY #14 – EXECUTION OF RECOMMENDATIONS

Summary: The BCFD should continue communication with IR Team members to ensure accurate implementation of recommendations.

FACTS:
The IR Team has had the privilege and honor of thoroughly assessing the BCFD as it relates to this incident. The IR Team is prepared to assist with the follow-through that is needed to ensure recommendations are completed. As the originators of this report, IR Team members will ensure the completion of recommendations fully captures the intent of the findings.

The Chief of Fire Department currently holds monthly meetings with various Committees. Some of these groups have special interests, while others are assigned projects and act as sounding boards. The BCFD members of the IR Team are committed to seeing this report through and offer regular attendance at meetings of a similar format. This will ensure frequent communication. The group can also break into sub-groups to work with specific command staff members as recommendations are assigned.

RECOMMENDATION:

1. The BCFD should continue communication with IR Team members to ensure accurate implementation of recommendations.

CAUSAL FACTOR: COMMAND & ACCOUNTABILITY

INTRODUCTION

NIOSH traditionally includes lack of incident command and lack of accountability as two of the five common causal factors attributing to firefighter line of duty deaths. Lack of Command & Accountability were not major factors in this incident. There were items relating to Command and Accountability that warrant discussion and recommendations.

SUMMARY OF RECOMMENDATIONS

A description of the specific facts relating to Command & Accountability with recommendations follows. Here is a summary of recommendations for the Command & Accountability section:

ITEM	SUMMARY	DESCRIPTION
Command & Accountability #1	Command Training	The IC for this incident was compliant with MOP 602-13. Reinforce compliance with other ICs using FOCAS Lab or similar training so they are similarly prepared for success.
Command & Accountability #2	Command Training-Incident Advisor	Training on MOP 601-1 should be conducted with all members who may function in the Incident Commander role. This should be integrated into the FOCAS Lab and stress the possible tasks of the Incident Advisor.
Command & Accountability #2	Command Training-Incident Advisor	The BCFD should conduct training to reinforce the best practice of maintaining initial operations during a MAYDAY on the tactical radio channel or changing channels only at the direction of the on-scene Incident Commander.
Command & Accountability #3	Command Training-Preparedness	Battalion Chiefs responding as part of the RITF should be in proper PPE, including SCBA in accordance with MOP 602-8 and be prepared to enter an Immediately Dangerous to Life or Health (IDLH) atmosphere and perform tasks as needed by the IC.
Command & Accountability #4	Incident Command Technician	The presence of the Battalion Technician was a key success for accountability on this incident.
Command & Accountability #4	Digital PAR	Evaluate and make a final determination of the appropriateness for a digital PAR system for the BCFD.
Command & Accountability #4	Incident Command Technician	Permanently establish and fully fund the Battalion Technician program with defined rank prerequisites and specialized training requirements including Equipment, Apparatus, and Computer/MDT familiarity and PAR practice to ensure effectiveness and consistency in performance.

CAUSAL FACTOR: COMMAND & ACCOUNTABILITY#1 – COMMAND TRAINING

Summary: The Incident Commander on this response performed in strict compliance with MOP 602-13: MAYDAY. Compliance with policy should be reinforced in training so the BCFD can replicate the results on future, similar incidents.

MOP 602-13

FACTS:

MOP 602-13 gives direction to Incident Commanders, Rescue Group Supervisors, and Fire Communications Bureau on how to appropriately respond to a MAYDAY. The Incident Commander strictly followed this MOP, and while the outcome was grave, the overall MAYDAY operation was successful.

The IC receives and acknowledges the MAYDAY from Engine 29 and follows every aspect of the MOP for "Actions by Incident Commander". He advises Engine 29's Officer to "go ahead" giving him the air to provide his LUNAR. The IC calls for "emergency traffic only" on the radio and confirms the dispatch of the Rapid Intervention Task Force. He deploys Engine 52 as the RIT and assigns Engine 52's Officer as the initial Rescue Group Supervisor. The IC **considered** the appropriateness of moving fireground operations to a separate channel, and he decided it was **unnecessary** in this case, as it would have been detrimental to incident accountability. Lastly, he continues incident mitigation through Charlie Division, advising him to work on extinguishing the fire from the rear.

The IC had practice managing MAYDAY incidents through training in the BCFD's FOCAS Lab. This IC is a primary FOCAS Lab team member. He evaluates other ICs. He was trained and mentally equipped to deal with the stresses presented to him and it showed in his performance and capability to effectively comply with MAYDAY policies.

Link to Fireground Audio:

https://s3.amazonaws.com/baltimorecity.gov.if-us-east-1/s3fs-public/2025-03/incident_audio.wav

RECOMMENDATION(S):

1. The IC for this incident was compliant with MOP 602-13. Reinforce compliance with other ICs using FOCAS Lab or similar training so they are similarly prepared for Command success.

PREVIOUS REPORT(S):

- Glover St.
- Macon St., #9

REFERENCES:

- BCFD MOP 602-13 Mayday – Revised, April 20, 2022
- BCFD Bulletin Fire Officer Command and Simulation Lab (FOCAS), Dated May 1, 2023.

CAUSAL FACTOR: COMMAND & ACCOUNTABILITY#2 – INCIDENT ADVISOR

Summary: MOP 601-1: FIREGROUND OPERATIONS STANDARD OPERATING PROCEDURE-REINFINFORCEMENT OF INCIDENT COMMAND states the rules of engagement for "Higher Ranking" officers who arrive on an incident that is rapidly escalating. On this incident, there were compliance issues with this MOP.

MOP 601-1

FACTS:

There is tremendous value in reinforcing and providing operational support for an existing Incident Commander who is managing an incident that is rapidly escalating. In the case of a MAYDAY situation, a strong command presence helps facilitate an effective resolve to the situation.

MOP 601-1: FIREGROUND OPERATIONS STANDARD OPERATING PROCEDURE-REINFINFORCEMENT OF INCIDENT COMMAND specifically states the following regarding the arrival and assignment of "Higher Ranking" officers: "*On any emergency incident that escalates to the point where "Higher Ranking" officers are summoned to attend, these officers shall make a determination upon arrival either to assume Incident Command or assign themselves in a supporting role. When the decision is made to assume a support role and/or act as an "Incident Advisor", they will conduct a 360 of the scene when feasible. This support role can play a critical function for the success of the operation".*

In the case where the "Higher Ranking" officer does not assume Incident Command and takes on the role of Incident Advisor, the MOP outlines possible duties for the Higher-Ranking officer. The manual suggests that they announce their role as Incident Advisor and assist with completion of a 360, establishment of hot and warm zones, monitoring effective member usage of PPE and assessing overall incident conditions. Regardless of the duties assigned, the Incident Commander of a lower rank will continue in the role of managing the incident.

On this incident, CAR5 did hold a face-to-face conversation with the Incident Commander but failed to announce his assumption of Incident Command or Incident Advisor role. During the interviews, it was

further noted that CAR5 elected to not assume the Incident Commander role because it would have prompted the recall of off duty Command Staff.

Prior to his arrival on the scene, CAR5 directed Command to switch non-MAYDAY operations to an alternate talk group. The Incident Commander, however, directed units to remain on the same tactical channel. MOP 602-13: MAYDAY states the following: *"Immediately upon receiving a MAYDAY message, the Incident Commander shall: Reassign the incident operations to a different talk-group* ***(if necessary)*** *and have FCB acknowledge, sound emergency tones, and repeat new operations talk-group. Rescue Operations shall continue on the original fireground channel."*

RECOMMENDATION(S):

1. Training on MOP 601-1 should be conducted with all members who may function in the Incident Commander role. This should be integrated into the FOCAS Lab and stress the possible tasks of the Incident Advisor.
2. The BCFD should conduct training to reinforce the best practice of maintaining initial operations during a MAYDAY on the tactical radio channel or changing channels only at the direction of the on-scene Incident Commander.

PREVIOUS REPORT(S)

- North Ave. A3, A8
- Stricker St. P. 118, 122 & 124
- Glover St.
- East Ave #13
- Macon St. #9
- FACETS P. 86

REFERENCE:

- NFPA 1561: Standard on Emergency Services Incident Management System and Command Safety, Annex J.6 and J.7. 2020 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- BCFD MOP 601-1 REINFORCEMENT of INCIDENT COMMAND – March 8, 2018
- BCFD MOP 602-13 Mayday – Revised, April 20, 2022
- BCFD Bulletin Fire Officer Command and Simulation Lab (FOCAS), Dated May 1, 2023.

CAUSAL FACTOR: COMMAND AND ACCOUNTABILITY #3 – PREPAREDNESS

Summary: Additional Battalion Chiefs (BC's) were dispatched and responded on this incident. When the BC's arrived, they were not in Proper Protective Equipment (PPE) to provide the appropriate assistance to the Incident Commander (IC).

FACTS:

MAYDAY and multi-alarm incidents are typically chaotic and require a strong supervisory presence. The Baltimore City Fire Department dispatches (2) Battalion Fire Chiefs (BCs) to all reported dwelling, building, apartment and high-rise fires. On this specific incident, Battalion Chiefs # 5 and 3 were dispatched with BC-5 listed as the 1st due. When a Rapid Intervention Task Force (RITF) is requested (typically by the Incident Commander (IC) or when Fire Communications hears a MAYDAY transmission) an additional Battalion Fire Chief as well as Battalion Chief EMS are also included in the RITF dispatch. When a 2nd alarm is requested by the IC, an additional BC is part of that dispatch assignment also. Video footage obtained during the investigation shows Battalion Chiefs that responded on the RITF and 2nd alarm, reporting to the command post wearing only a turnout coat and helmet.

The BC responding as part of the RITF may be assigned as the Rescue Group Supervisor, potentially requiring them to enter an IDLH. MOP 602-8, section titled "Rapid Intervention Task Force" specifically designates 1 Battalion Chief as the Rescue Group Supervisor. This BC should "report in full turnout gear with SCBA to the incident commander for deployment" per the MOP.

While on this incident, the MAYDAY operations were concluded prior to arrival of the RITF BC. Previous incidents, such as Stricker Street, were not concluded so early. Furthermore, BCs responding on additional alarms should be prepared to become Division or Group Supervisors. The Incident Commander for the Linden Heights Avenue incident needed to establish a Roof Division and could have used a Battalion Chief on the roof to assist with the span of control.

BCFD Operations Memo dated March 3, 2011, (Ops Memo #3-11) states: "…Unless otherwise ordered by the Incident Commander, members reporting to the fireground are to be wearing full protective clothing including SCBA. Additionally, in an email (dated 5/23/23) from the Shift Commander's Office (Deputy Chief Thomas Tosh) on behalf of the Assistant Chief- Operations which states: "Battalion Chiefs are reminded of the requirement to have the appropriate Personal Protective Gear donned at all times while operating on all Emergency Incidents."

RECOMMENDATION:

1. Battalion Chiefs responding as part of the RITF should be in full, proper PPE including SCBA in accordance with MOP 602-8 and be prepared to enter an Immediately Dangerous to Life or Health (IDLH) atmosphere and perform tasks as needed by the IC.

PREVIOUS REPORT(S):

- Stricker St. P. 123
- Macon St. #9

REFERENCES:

- Occupational Safety and Health Administration (OSHA) 1910.134.
- BCFD MOP 515-11: DISPATCH PROCEDURES
- BCFD MOP 602-8: RIT
- BCFD Shift Commander email (Deputy Chief Thomas Tosh) dated 5/23/23.
- BCFD Operations Memo #3-11

CAUSAL FACTOR: COMMAND & ACCOUNTABILITY #4 – INCIDENT COMMAND TECHNICIAN

Summary: The Incident Commander effectively managed various aspects of the incident, while the Battalion Technician maintained personnel accountability and recorded key benchmarks.

MOP 602-9

FACTS:

During the incident, the Battalion Technician provided the Incident Commander with additional support at the Command Post. This allowed the IC to focus on critical tasks such as managing the MAYDAY rescue efforts while the Technician recorded incident benchmarks, maintained accountability, and conducted a Personnel Accountability Report (PAR) in accordance with MOP 602-9: PERSONNEL ACCOUNTABILITY REPORT.

Once the members from Engine 29 were removed from the dwelling, the Incident Commander ordered a PAR to be conducted by his Battalion Technician. The PAR was mostly complete, with all first alarm units addressed, as well as the two engines and one truck that requested to be added. Engine 52's PAR was not verbalized on the radio, but video evidence shows it was visually completed. Truck 16's PAR was difficult to understand due to facepiece interference, causing 2 members to go unaccounted for a short period of time. This was corrected 6 minutes later. Additionally, 3-unit officers declared they were PAR by reporting their location but not the exact number of personnel. The PAR was generally successful, but there were areas for improvement.

The Battalion Tech program started in the BCFD in December 2022 as a pilot program (Ops Memo 14-22) and has since been updated (Ops Memo 03-25). The Battalion Tech assumes the role of accountability officer when designated and assists with incident action plan documentation. The only requirement for a member to work as a Battalion Tech on Overtime is that they are an officer and have training on the ADASHI command software. The Battalion Tech has been incorporated into FOCAS Lab since the pilot program started. PARs are frequently practiced as part of FOCAS Lab incidents. There is currently no requirement that Battalion Tech participate in FOCAS Lab as part of their approval.

Shortly after the start of the Battalion Technician program, the BCFD piloted a digital PAR program in January of 2023. This program allowed the Battalion Tech to conduct a PAR using the MDT. The members radio verbalizes "PAR Request" until the PTT is depressed, acknowledging the PAR for the individual. The PAR does not take priority over verbal transmissions, and it takes 1 second per radio to distribute the PAR across the channel. Challenges identified by the members in the pilot program included loaner radio identification and lost / missing radios still tied to units. Consequences of a false PAR with an urgent transmission were also discussed among members in the pilot. A final determination of whether to use the system or not was never relayed to members. A digital PAR for this incident could have taken under 60 seconds.

Several urban fire departments in the United States have a Battalion Technician program in place to support Incident Commanders. NFPA Standard 1561 requires incident commanders and division or group supervisors to be aware of the location, condition, function, and position of all personnel during an emergency incident. Personnel accountability systems managed by a single person such as a Battalion Technician, readily identifies both the location and function of all members operating at an incident scene. Furthermore, NFPA Standard 1710 Section 5.2.2.2.5 states, "Supervisory chief officers shall have staff aides deployed to them for purposes of incident management and accountability at emergency incidents."

Often, Incident Commanders become task-saturated during working incidents thus the opportunity for mistakes is drastically increased. Battalion Technicians can keep track of assignments, locations and progress of companies while documenting each instance. In addition, these Technicians serve as another set of eyes and ears for the Incident Commander.

RECOMMENDATIONS:

1. The presence of the Battalion Technician was a key success for accountability on this incident.
2. Evaluate and make a final determination of the appropriateness for a digital PAR system for the BCFD.
3. Permanently establish and fully fund the Battalion Technician program with defined rank prerequisites and specialized training requirements including Equipment, Apparatus, and Computer/MDT familiarity and PAR practice to ensure effectiveness and consistency in performance.

PREVIOUS REPORT(S):

- Calverton Rd. p. 84
- North Ave. A1 and A10
- Stricker St. P. 56 and 117
- Glover St.

- Liberty Heights #2 and #9
- East Ave. #5, #8 and #9
- Macon St. #7 and #9
- FACETS P. 86

REFRENCES:

- BCFD Operations Memo 14-22: Battalion Technician Position Pilot Program (Dated 12/12/22)
- BCFD Operations Memo 04-23: Battalion Technician Pilot Program (Dated 02/07/23)
- BCFD Operations Memo 03-25: Battalion Technician Pilot Program (Dated 09/12/25)
- BCFD MOP 602-9: PERSONNEL ACCOUNTABILITY REPORT
- NFPA 1561: Standard on Emergency Services Incident Management System and Command Safety, Chapter 20. 2020 Edition. In *NFPA Codes and Standards Online.* Retrieved from https://www.nfpa.org/codes-and-standards
- NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments. 2020 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- NIOSH - Cherry Road; Recommendation #2: Fire Departments should consider providing Incident Commanders with a Command Aide

CAUSAL FACTOR: COMMUNICATIONS

INTRODUCTION

Lack of communication is one of the five common factors frequently identified by NIOSH in Line of Duty Death Investigations. The IR Team's analysis of communications for this report extends beyond the act of communicating on the fireground and includes data collection and assessment of the Fire Communications Bureau. It also includes assessment and recommendations of general communication between divisions within the BCFD.

Communications data was collected in the form of radio transmission recordings, transcripts, CAD data, and personnel interviews. These interviews were conducted in January and February 2024. They were not part of the original interviews conducted in November 2023.

The BCFD has shown immediate responsiveness in adjusting communications as a result of this incident. These adjustments are evidenced by highlighting the item in RED or YELLOW and then adjusting the Description to GREEN.

SUMMARY OF RECOMMENDATIONS

A description of the specific facts relating to Communications with recommendations follows. Here is a summary of recommendations for the Communications section:

Communications # 1	Communication Between Divisions	Continue the daily meeting between Operations, Communications, Logistics, and other divisions to ensure operational readiness and efficiency.
Communications #2	Congested Fireground Channel	The BCFD has established MOP 602-20 to ensure all units, regardless of rank, make status updates with the MDT or on a lower acuity channel, i.e. "A-1 Main", to reduce unnecessary fireground transmissions.
Communications #3	CAD Data Entry Error	Immediately remove the "Balance" *[BALNCE]* command line from the department's CAD program. In September 2024 this command was removed from CAD and can no longer be used.
Communications #3	Dispatcher Training	Continue to include the Fire Communication Bureau Dispatchers using FOCAS Lab on the proper commands to use and to suggest and dispatch the proper units throughout a variety of training scenarios.
Communications #4	Communications Software	Adjust the MDT display to ensure separate lists are shown for each, distinct request for additional resources.
Communications #5	Communications Evaluation	Conduct a 3rd party evaluation of BCFD Fire Communications Bureau to assess the processes used and identify areas of improvement based on best practices of other dispatch centers.
Communications #6	Communications Response Profile	If an ALS unit is not available to respond to a structure fire, then a BLS unit and EMS Officer should be dispatched.

Communications #6	Communications Response Profile	Adjust initial dispatch to include an EMS Officer on all initial Box Alarms and increase the subsequent response profile for EMS Supervisors.
Communications #6	EMS Officer Training	Include all EMS Officers in FOCAS Lab training.
Communications #7	Radio Training	Reinforce training on radio discipline and MAYDAY procedures.
Communications #7	Radio Software Upgrade	Consider adding a radio channel marker (audible and visual) to indicate to units operating on the incident that the IC has restricted radio transmissions on that particular channel.

CAUSAL FACTOR: COMMUNICATIONS #1 – COMMUNICATION BETWEEN DIVISIONS

Summary: Ensure daily communication between divisions including Operations, Communications, Training, and Logistics to ensure operational readiness and efficiency.

FACTS:

There was a significant service delivery gap during the initial dispatch for Linden Heights. Particularly, the 3 closest truck companies (Trucks 27, 12 and 18) were either out of service for repair or assigned to other calls. This left the closest truck on the initial box coming from 4.0 miles away.

Currently, the Shift Commander (CAR5) is responsible for maintaining unit coverage throughout the city. The Shift Commander on the date of this incident stated that he was unaware that Truck 27 was at the Fire Apparatus Coordinator's office. Had this information been communicated earlier, transfer coverage could have been planned and put in place, preventing the gap in coverage. Transfer coverage is often warranted due to Training and Logistical needs, and it is communicated from the Shift Commander's Office to Fire Communications Bureau.

The BCFD started a Virtual Daily Operational Meeting in February 2024 that includes all Field Battalion Chiefs and all divisions that provide support or influence for Operations: Shift Commander, Fire Communications, Training, Logistics, EMS, Safety, Fire Prevention, Information Technology, Apparatus Coordinator, Office of Emergency Management, and Special Operations. This meeting has been an excellent opportunity to communicate needs across divisions and ensure that the BCFD is best prepared for the dynamics of the day. This recommendation is now a success that the BCFD should strive to continue.

RECOMMENDATION:

1. Continue the daily meeting between Operations, Communications, Training, Logistics and other divisions to ensure operational readiness and efficiency.

CAUSAL FACTOR: COMMUNICATIONS #2 – CONGESTED FIREGROUND CHANNEL

Summary: Numerous support units utilized a congested fireground radio channel for status changes.

FACTS:

During this incident, numerous support units not directly involved in fire suppression or rescue efforts called enroute on the fireground channel. The fireground channel was already congested with numerous units engaged in fire suppression operations calling for water. Additionally, during the MAYDAY operation, units continued to update their status by calling on-scene. Most BCFD units are equipped with either a Mobile Data Terminal (MDT), DEK status head (MODAT replacement) or both.

Non-Operational units responding to a scene, but not dispatched, should advise their status verbally on A1/Main to Fire Communications (FCB). Once added to the incident by FCB, those units should then utilize their MDT/DEK status head (if equipped) to update their status. If not equipped or their MDT/DEK Status Head is not working properly, they should then transmit their status on A1/Main.

This policy was implemented with BCFD Operations Memo 8-24. It was permanently implemented with MOP 602-20 in September 2025.

RECOMMENDATION:

1. The BCFD has established MOP 602-20 to ensure all units, regardless of rank, make status updates with the MDT or on a lower acuity channel, i.e. “A1/main”, to reduce unnecessary fireground transmissions.

PREVIOUS REPORT(S):

- Stricker St. p. 52
- Liberty Heights #2
- East Ave. #1

REFERENCES:

- BCFD MOP 515-02: DISPATCH PROCEDURES
- BCFD MOP 602-04: FIREGROUND OPERATIONS RADIO COMMUNICATIONS PROCEDURES
- BCFD MOP 602-20: RADIO TRAFFIC NON-OPERATIONAL PERSONNEL
- BCFD Operations Memo No. 08-24

CAUSAL FACTOR: COMMUNICATIONS #3 – CAD ENTRY & DISPATCHER TRAINING

Summary: The Department's CAD program should be updated and reinforced with training to include the elimination of the Balance (BALNCE) Command. A Rapid Intervention Task Force (RITF) was requested by the Incident Commander (IC), but the RITF was not correctly dispatched per MOP 602-8: RAPID INTERVENTION TEAM (RIT)

MOP 602-8

FACTS:

The Balance (BALNCE) command was used in older versions of CAD to upgrade assignments as incidents escalated. Prior CAD instruction and training had used this command to dispatch additional units. Currently this command is no longer used by Fire Communications Bureau (FCB). The dispatcher that used the BALNCE command on this incident was initially trained on the older version of CAD.

At 15:50:00 BC5 transmitted, *"Command to Communications, I need you to dispatch a RIT TASK Force, a MAYDAY has been declared…"*. At 15:50:07 CAD suggested the correct MAYDAY response with Units: E21, E13, E8, E30, T8, T5, SQ26, M16, EMS5, BC6, BCEMS as per MOP 602-8. FCB executed the Balance (BALNCE) Command with the following units being dispatched, Units: E21, E13, E8, E30, E43, T8, T1, M15, BC3, BC6, SO2 with a second Working Fire (WF) dispatch of Units: E4, T5, AF1, and FIB. While the "BALNCE" command produced a similar resource assignment as a RITF dispatch, it lacked several resources that a RITF assignment per MOP 602-8 includes such as: a SOC unit (Rescue Co. 1 or Squad if Rescue Co. 1 is unavailable as was with this RITF), EMS district officer and Battalion Chief EMS.

Additionally, at 15:51:04 command states, *"Command to Communications, I need a second alarm,"* which was acknowledged by FCB at 15:51:08, *"Communications copies"*. Later in the incident at 16:44:11, the IC contacted FCB and stated, *"I don't think you ever filled out my 2nd alarm, can you fill out the 2nd alarm…"*. At 16:46:23, FCB called Command and stated, *"your 2nd alarm units, T8, E30, T1, BC2, EMS5, PIO, E43"*. Because of the entered Balance (BALNCE) Command by FCB, the full RITF dispatch nor the full 2nd Alarm dispatch was ever dispatched to its correct number of units. The IC received various components of both assignments (RITF and 2nd alarm) instead of a full assignment of each.

FOCAS Lab uses a member from FCB to act as the dispatcher. This is an excellent training opportunity. Due to low staffing, this role is rarely an assigned dispatcher, and instead a FOCAS Lab Fire Officer fills in.

RECOMMENDATION(S):

1. Immediately remove the Balance (BALNCE) command from the department's CAD program. In September 2024 this command was removed from CAD and can no longer be used.

2. Continue to include Fire Communication Bureau Dispatchers using FOCAS Lab on the proper commands to use to suggest and dispatch the proper units throughout a variety of training scenarios.

PREVIOUS REPORT(S):

- North Ave H4
- Stricker St. p. 52

REFERENCES:

- BCFD MOP 602-8: RAPID INTERVENTION TEAM (RIT)

CAUSAL FACTOR: COMMUNICATIONS #4 – COMMUNICATIONS SOFTWARE

Summary: The MDT (Mobile Data Terminal) does not provide a clear distinction between which units are responding on which subsequent request for additional resources, i.e. Working Fire (WF), Rapid Intervention Task Force (RITF), additional alarm assignments etc.

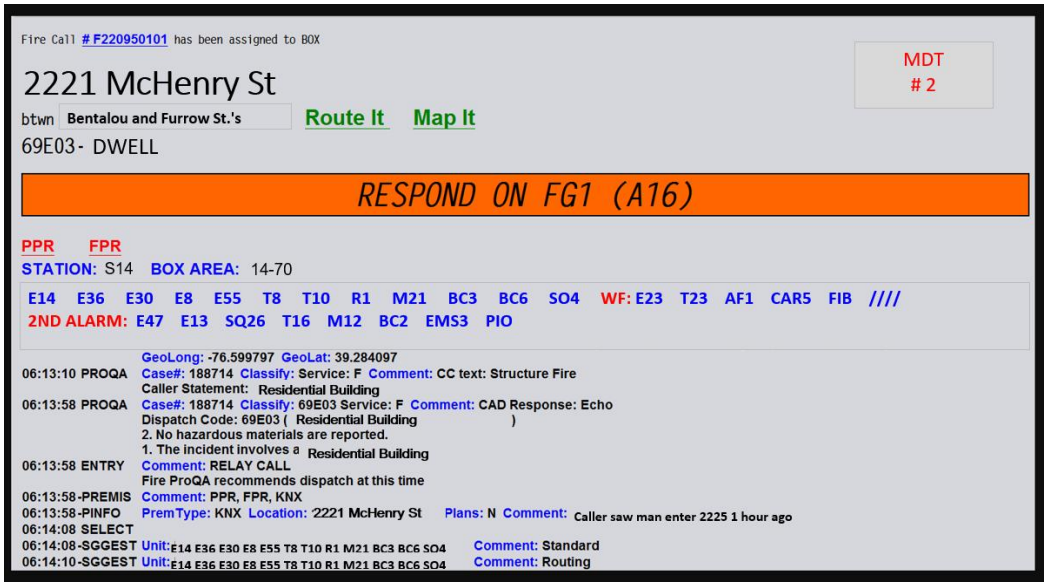
FACTS:

Baltimore City Fire Department field apparatus (Fire, EMS, and Special Operations Units) is equipped with an MDT. The MDT displays information regarding the incident that unit(s) are dispatched to. The information received by the MDT is provided by the Fire Communications Bureau (FCB) dispatcher. Information that is transmitted to the MDT for the responding unit(s) to read includes additional units that may also be assigned to the response. In the case of a fire involving a structure, the initially assigned units (1st alarm) are listed in order of dispatch. This order corresponds to their specific assignment on the fireground. The order of dispatch on the 1st alarm assignment is easy to read, even under stressful conditions. This becomes complicated when WF, RITF and/or additional alarms are requested. When the additional resources are requested, it becomes difficult to distinguish which units are assigned to the request (WF, 2nd alarm, RITF etc.) and their anticipated order of arrival.

The IC made multiple requests for additional units on this incident, starting with a WF, then a RITF, then a 2nd Alarm. When these units appeared on the MDT, it was not obvious which units were responding on which request. This is significant for this incident because the IC advised Charlie division that he had a 2nd alarm coming, and that he should use those specific units as needed.

Ultimately, the MAYDAY was resolved quickly and the only unit on the RITF that was used for MAYDAY operations was Medic 15. If it's the IC's intent to specifically use the RITF while Charlie Division uses the 2nd alarm, then a clear delineation should be made of what units are responding for each request. Information should be relayed electronically by MDT instead of requiring radio transmissions. This saves valuable airtime for emergency traffic, reducing interruption of a rundown of response units.

The following page shows an example of how a WF, and 2ND ALARM units could be included on the MDT readout for better clarity.



RECOMMENDATION:

1. Adjust the MDT display to ensure separate lists are shown for each, distinct request for additional resources.

PREVIOUS REPORT(S):

- Stricker St. p. 52
- Liberty Heights #7, 8

CAUSAL FACTOR: COMMUNICATION #5 – COMMUNICATION EVALUATION

Summary: Conduct a third-party evaluation of the Fire Communications Bureau to evaluate processes beyond the scope of this committee.

FACTS:

Members from the Fire Communications Bureau (FCB) were interviewed as part of fact-finding for this report. In those interviews, IR Team members identified areas for potential improvement based on their limited experience and perspective. One member of the IR Team was a previously trained dispatcher in another jurisdiction 20 years ago, while another was trained in the FCB Liaison program. Due to this limited perspective, the Team does not feel well-versed enough with Fire Communications to make concrete recommendations.

One recommendation observed by the Team involved the use of headsets for dispatchers. Currently, dispatchers at FCB do not use headsets, which could help filter out distractions and focus on radio transmissions. This lack of equipment may contribute to critical transmissions being missed or misinterpreted. For example, during one incident, when E29 arrived on scene, the OIC gave a size-up and assumed command. However, FCB repeated E29's transmission, incorrectly identifying them as SQ40 and stating that SQ40 had assumed command, even though SQ40 had not yet arrived on the scene.

The Team also observed that distraction is built into the current practices at the communications center. When a critical incident occurs, FCB opens the channel for the entire floor to hear, ensuring situational awareness for all. While this practice has its benefits, it also requires dispatchers to multitask on their current channel assignments. Research on human cognition, such as studies by Gladstones, Regan & Lee (1989), Pashler (1994), and René Marois of Vanderbilt University, highlights that humans face a "response selection bottleneck" when tasked with handling multiple tasks simultaneously. These findings suggest that multitasking, especially when decision-making is involved, can significantly hinder performance and efficiency.

While headsets might alleviate some distractions, feedback from dispatchers and supervisors revealed little interest in their use, as verbal communication across the room is critical for effective incident coordination. A change in the current practice of opening the channel might negate the need for headsets altogether. Ultimately, headsets are just one example of a possible improvement. A thorough evaluation of FCB's current practices, tools, and workflows would provide more substantial and well-rounded insights into potential enhancements, ensuring operational efficiency, and accuracy in critical incidents.

In addition to operational improvements, the need for a comprehensive assessment of FCB's processes is further underscored by recent organizational changes. Fire Communications was recently relocated from one building to another due to two primary factors: ongoing concerns with the HVAC system and

the need to enhance continuity of operations by collocating Fire Communications and 911 Call Takers in the same building. These changes aim to streamline operations, but they also present an opportunity to review and optimize practices for improved efficiency.

RECOMMENDATION:

1. Conduct a 3rd party evaluation of BCFD FCB to assess the processes used and identify areas of improvement based on best practices of other dispatch centers.

PREVIOUS REPORT(S):

- FACETS p. 98

REFERENCES:

- Gladstones, W. H., Regan, M. A., & Lee, R. B. (1989). Division of attention: The single-channel hypothesis revisited. *The Quarterly Journal of Experimental Psychology A: Human Experimental Psychology, 41*(1-A), 1–17. https://doi.org/10.1080/14640748908402350
- Pashler, H. (1994). Dual-task interference in simple tasks: Data and theory. Psychological Bulletin, 116(2), 220–244. https://doi.org/10.1037/0033-2909.116.2.220
- Han, S. W., & Marois, R. (2013). The source of dual-task limitations: Serial or parallel processing of multiple response selections? *Attention, Perception, & Psychophysics, 75*(7), 1395–1405. https://doi.org/10.3758/s13414-013-0513-2

CAUSAL FACTOR: COMMUNICATIONS #6 – RESPONSE PROFILE WITH TRAINING

Summary: The BCFD should upgrade current response profiles for EMS transport units and EMS Officers to ensure adequate assistance is available for transport units and the Incident Commander. This upgrade should be supported by training for EMS Officers.

FACTS

This incident did not have a Medic Unit dispatched initially because one was not available. Based on dispatch procedures at the time, in the event of a fire in a structure "Box Assignment": DW, BLDGF, Hi-Rise BLDGF for example, an ALS unit is required. When an ALS unit is not available, that resource is identified as "UNMET". In the case of the Linden Heights Avenue fire, there were no EMS Transport units, ALS or BLS, initially available. If an ALS unit becomes available after the dispatch, it requires the FCB Dispatcher to manually add that unit to the response profile and dispatch it. CAD will NOT recommend a BLS unit, even if that unit was originally available.

Medic 11 picked up the response at 1542 hours and arrived at 1555 hours because they were responding from University of Maryland Hospital, approximately 6 miles away. Ambulance 22 showed out of service at 1518 hours at EMS Supply Facility at 3500 West Northern Parkway. That unit then activated in quarters at 1551 hours.

If CAD was allowed to suggest a BLS unit, FCB could have contacted Ambulance 22 to possibly clear EMS Supply and then been available for dispatch. This would have provided an EMS transport unit to arrive much sooner than Medic 11 coming from University Hospital and at a minimum, provided BLS care and a transport capability to take the critically injured members to the hospital. NFPA 1710 does not require the transport unit to have Advanced Life Support capabilities for fireground standby. An upgrade to ALS is required if it is later determined that there is a confirmed ALS patient.

This incident had two (2), high acuity ALS patients as a result of a hostile fire event. The patients were ultimately cared for and transported by Medic 11 with EMS5 and Medic 15 by themselves. When the member is a higher acuity patient, an EMS officer and suppression company may be needed to assist with patient care and transport. This was the case for EMT/FF Pitts. Medic 15 transported Captain Rinaldo. Medic 15 did not have a suppression company or EMS Officer to assist them with care and transport. They did not ask the IC for assistance due to radio traffic and incident complexity. Medic 15 asked other fire suppression officers on the incident for help face-to-face, but none of those officers provided a driver like they needed. Dispatch procedures should be adjusted to assist with this critical need.

The BCFD has supplemented EMS transport units with private, commercial, BLS ambulance surge units since December 2020 (Ops Memo 09-20). These units operate on a modified schedule based on peak call hours and availability. These units are identified as the 600 series of BLS units- A601, 602, etc. At the time of this incident, there were three (3) 600 series units working. Two were dispatched on other incidents (A602, A603) and one was AT HOSPITAL with a patient (A601). Even if they were available, they would not have been considered for dispatch due to CAD requiring ALS. This is the same reason a BCFD BLS unit would not have been considered. In August 2025 as the previous contract expired, the

BCFD contracted with a separate, private, commercial company for the 800 series of BLS units (Bulletin Dated August 22, 2025).

RECOMMENDATIONS:

1. An ALS unit is the preferred EMS unit of choice to respond to a structure fire. If an ALS unit is not available, then a BLS unit and EMS Officer should be dispatched. An EMS officer can upgrade the BLS unit if necessary. This upgrade should be separate and in addition to recommendation #2 below. This process was implemented by Fire Communications in February 2024. MOP 515-11 was updated in March 2025 to also reflect this change.

2. Adjust initial dispatch to include an EMS Officer on all initial Box Alarm Assignments and increase the response profile for EMS for all additional resource requests as follows:
   - Initial Box Alarm: 1 EMS Officer regardless of ALS/BLS transport; 2 EMS Officers if BLS Transport
   - Working Fire Assignment (WF): add Battalion Chief EMS (BCEMS)
   - 2nd Alarm: an additional EMS Officer should be dispatched, as current practice
   - 3rd Alarm: Deputy Chief-EMS Operations should be dispatched
3. Include EMS District Officers in FOCAS Lab training to gain proficiency in command-and-control operations as the BCFD transitions to these updated response procedures.

PREVIOUS REPORT(S):

- FACETS p. 98

REFERENCES:

- BCFD MOP 515-11: DISPATCH PROCEDURES
- BCFD MOP 575-13: MEDIC UNIT DISPATCH-FIREGROUND
- BCFD MOP 810-02: PERSONNEL-EMS
- BCFD Bulletin Dated May 1, 2023: Fire Officer Command and Simulation Lab-FOCAS Lab
- NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments 2020 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- BCFD Operations Memo 09-20: COVID-19 Ambulance Surge Plan
- BCFD Bulletin Dated August 22, 2025: American Medical Response

CAUSAL FACTOR: COMMUNICATIONS #7 – RADIO TRAINING & SOFTWARE UPGRADE

Summary: When E29's Officer declared a MAYDAY, the Incident Commander (IC) advised the fireground channel to transmit emergency traffic only. Numerous units continued to transmit various messages that were not involved with the MAYDAY. This should be corrected through reinforcing training and updating radios.

FACTS:

During this incident, when E29 declared a MAYDAY, the Incident Commander advised Fire Communications (FCB) that a MAYDAY had been declared and requested a RITF. The IC then advised all units on the fireground to transmit emergency traffic only. This order follows the BCFD MAYDAY procedures found on the BCFD Command Board worksheet carried in all BCFD Battalion Chief vehicles:

	1. Confirm / Acknowledge MAYDAY has been received
	2. Gain Control of radio traffic (REPEAT YELLOW BOX BELOW)
"COMMAND to all units, a MAYDAY has been declared on the fireground. Stop all routine radio traffic and continue fire attack. Engine _____ (RIT) deploy the RIT to the last know location where the MAYDAY was reported."	
	3. DEPLOY RIT TEAM to last known location
	4. Get a LUNAR (Only if more information is needed from initial report

LOCATION	UNIT	NAME	AIR / INJURY / TRAPPED / RESCUED

(image above is an image of some components of the BCFD Command Board-MAYDAY section)

Units not directly involved in the MAYDAY operations continued to transmit non-MAYDAY related messages on the fireground channel. This interrupted radio traffic between the distressed members and the IC. Additionally, when the IC attempted to locate E29 as well as conduct a Personal Accountability Report (PAR), he was interrupted numerous times with radio traffic not pertinent to the MAYDAY or PAR.

A radio channel marker is an intermittent tone at specific timed intervals. This intermittent tone will serve as notice to all units operating on that channel that it has been restricted. Similar channel markers are currently used by Police Departments when they want to restrict radio traffic on a specific channel.

Currently the BCFD's portable radios have a visual display on their top and front display when a member hits their Emergency Activation Button (EAB). There is no tone with this. The BCFD's portable microphone transmitters also have a light with multiple, visual color capabilities.

RECOMMENDATIONS:

1. Reinforce training on radio discipline and MAYDAY procedures.

2. Consider adding a radio channel marker (audible and visual) to indicate to units operating on the incident that the IC has restricted radio transmissions on this channel.

PREVIOUS REPORT(S):

- North Ave. B1
- Glover St.
- Liberty Heights #7, 8
- East Ave. #1
- FACETS p.100

REFERENCES:

- Baltimore City Fire Department- Command Board Worksheet
- BCFD MOP 602-13: MAYDAY
- Baltimore County Fire Department- Fire and Safety Communications Channel Marker ppt

CAUSAL FACTOR: TRAINING

INTRODUCTION

Training is not considered one of the five common causal factors identified by NIOSH. Training is a reasonable solution to reduce other causal factors, like risk assessment and following established policy. It was determined to make training a separate section while evaluating this incident because EMT/FF Pitts was relatively new to the field. This fire occurred on his nineteenth 24-hour shift. To evaluate training, interviews were conducted with a sample of EMT/FF Pitts' recruit class, as well as an additional recruit class that was at the Fire Academy concurrent with EMT/FF Pitts' class. Interviews were also conducted with Fire Academy staff members.

The personnel involved in this incident had various degrees of training which is further discussed in the "Individual Member Training Profiles" section.

BACKGROUND

Fire Academy

The Baltimore City Fire Department's Training Academy is in the central-eastern corridor of the city. Named in memory of past Deputy Chief Frank J. Trenner, the Fire Academy located at 6720 Pulaski Highway is the only fire training site within the Baltimore City Fire Department. The 8-acre site consists of a main classroom facility constructed in 1955.

Baltimore City Fire Academy Training Compound with Burn Building

The main campus building is composed of several classrooms, a 2-bay annex, a 6-story, non-fire drill tower, and a hall converted to a weight room/gymnasium. In addition to the main building, several temporary trailers have been added to facilitate in-service and continuing education training. The grounds host a live fire (class A) burn building, propane fueled tanker and vehicle props, a flashover simulator, and a simulated basement fire conex container.

Recruit Selection, Training and Transition

Job postings for the Baltimore City Fire Department (BCFD) occur on a biannual basis. Employment is contingent upon passing a written exam, a physical agility exam proctored internally by the BCFD staff, and lastly an oral interview by Baltimore City community members in conjunction with BCFD staff.

Upon selection, the Baltimore City Fire Department currently requires all firefighters to complete a basic 41-week firefighter training program which includes Maryland State Certifications in Emergency Medical Technician (EMTB), Firefighter I, Firefighter II, Rescue Technician – Site Operations, Technical Rescue: Common Passenger Vehicle Rescue, Hazardous Materials Operations, Emergency Vehicle Operator and Firefighter Survival and Rescue.

The recruit training syllabus is based on the Maryland Fire and Rescue Institutes (MFRI) curriculum, which meets National standards for Job Performance Requirements. In addition to the MFRI curriculum, the academy hosts BCFD Skills, which is a 4-week Baltimore-specific course focused on skills and knowledge of operational strategies and tactics.

Upon graduation from the 9-month academy, the probationary EMT/FFs are assigned to a company. When probationary EMT/FFs are assigned to a company they wear a yellow helmet and are assigned a Probationary Workbook with specific tasks that must be checked off by their supervisor. Once all tasks are completed and they reach their one-year anniversary, they receive a black helmet.

Field Training

Two engine companies and one ladder company are sent to the Fire Academy for training where they drill on equipment and operational updates twice a week. The Fire Academy conducts MFRI supervisory training to ensure members can comply with promotional requirements. Adjunct Instructors also administer FOCAS Lab Incident Command training on a weekly rotation to 3 command officers per day. The Fire Academy also hosts a number of grant-funded training initiatives that are discussed in the *Recommendations* that follow which members may self-select to attend. The Fire Academy also publishes Training Days, a periodic document that uses recent incidents to discuss best practices. Firefighters can also take outside training classes at their own expense.

History of Academy Staffing

In 2007, EMT/FF Recruit Racheal Wilson died as a result of off-site, NFPA non-compliant, live fire training exercises hosted by the BCFD Training Academy. As a result of her death, the BCFD Command staff overhauled the Training Academy's structure and implemented the position of Emergency Service

Instructor (ESI). The ESI role is an interviewed and promoted position equivalent to a senior firefighter. Each ESI is certified by the Maryland Instructors Certification Review Board (MICRB) and qualified in their respective skill. ESIs maintain an assignment at the Training Academy year-round, while adjunct instructors are brought in for the specific daily needs of recruit or field training exercises.

SUMMARY OF RECOMMENDATIONS

A description of the specific facts relating to Training with recommendations follows. Here is a summary of recommendations for the Training section:

ITEM	SUMMARY	DESCRIPTION
Training #1	Recruit Training	Continue to implement the updated recruit training started in April 2024 of fire dynamics, flow & move, and TIC's.
Training #1	Recruit Training	Supplement recruit training to include education and practice (as applicable) of SCBA emergencies and PPE.
Training #2	Recruit Field Training	Ensure Operations Memo 06-24 is continued by updating MOP 310 to include the 5th member ride along process and direction for the company officer.
Training #2	Recruit Field Transition	Allow Operations to move newly assigned recruits to ensure they are completing their 5th member ride along period at busier units.
Training #3	Recruit & Field Training Radios	The BCFD should conduct radio training under stress for field personnel and recruits that includes use of the EAB with Dispatchers. Training should validate all the nuances associated with the activation of the EAB and outlined in an updated Training Manual.
Training #4	Recruit Training-Fitness Trainers	The BCFD should create and designate a qualified BCFD Health and Fitness Coordinator to oversee a fitness training program and coordinate Peer Fitness Trainers to reinforce the physical performance standards.
Training #5	Field Training-RIT	Update MOP 602-8 to include all units in the assessment of a structure for firefighter egress and reinforce updates on that policy and other RIT related policies with training for all members.
Training #6	Field Training	Continue to implement the optional HEAT and AFR courses to reinforce the concepts of fire dynamics, flow & move, TIC's and BCFD specific lessons learned.
Training #6	Field Training	Establish and implement field training to include education and practice (as applicable) on SCBA emergencies and PPE.
Training #7	Acquired Structure Training	Develop a policy and practice for training with acquired or loaned structures to observe fire growth for modern fuels with no interior operations. Use for company drills and multi-company drills with no live fire, and to conduct live fire training compliant with NFPA 1403.
Training #7	Acquired Structure Training	Required elements of an updated acquired structure policy would include proper preparation by field units and Fire Academy Instructors and City housing providing a list of properties available for use throughout the City.

Training #8	Mobile Field Training	On-duty training for field members should be updated to be mobile as the topic allows. This was done in October 2023 for the 2:1 Rope Systems and it should be continued.
Training #8	Electronic Training	Ensure QR codes and current technologies are used to assist member with self-study. Training Manuals and Training Days publications are currently doing this, and it should be continued.
Training #9	Command Training	Continue and expand FOCAS Lab to provide leadership and command training to all levels of supervision, including unit officers, Battalion Chiefs and Shift Commanders with specific emphasis on decision making and incident management.
Training #10	PO/EVD Training	Implement training for all current, acting, and newly promoted POs and EVDs that includes MFRI courses, Acting Manual completion, 1-week discipline-specific school, practical evaluations and annual re-evaluations.
Training #11	Facilities	Ensure members training at the Fire Academy can shower after completing live fire evolutions.

CAUSAL FACTOR: TRAINING #1 – RECRUIT TRAINING

Summary: The BCFD should establish and implement formal classes as a supplement to current, minimum recruit requirements that contain:

- Fire dynamics and how a fire behaves in various situations.
- Background and basis for flowing water while maneuvering through a dwelling for extinguishment, emphasizing this tactic throughout ALL of the recruit's initial training.
- Thermal imaging - purpose, importance, proper use and limitations.
- SCBA emergencies and how members should operate should they encounter any one of the 4 major SCBA emergencies.
- Issued PPE education with a focus on its capabilities, limitations, and its response in various fire environments to heat transfer.

FACTS:

The BCFD supplements recruit training with jurisdiction-specific training, known as "BCFD Skills" at the conclusion of each recruit class. The current length of this supplement is 4 weeks. Topics included are Truck Company Operations, Bailout Training, Basement Fires, High Rise Fires, Flashover Training, and additional Live Fire Training.

Disclaimer: The informational text in the following training section is relevant to multiple subsections and has been repeated as applicable.

Fire Dynamics

Education and training requirements on fire dynamics/fire behavior and ultimately what leads to a rapidly changing environment that recruits receive in their initial training curriculum outlined by the Maryland Fire Rescue Institute (MFRI) classes, is a total of 3 hours or 1.02% of their training. There is no other required class or course work to prepare recruits for these events or the prediction of these events that is required by the department or the State of Maryland. The Officer and Pipe of Engine 29 made entry into the dwelling not realizing that the conditions were rapidly changing and ultimately were caught in a high heat environment.

NFPA 1700, published in 2021, is the first NFPA document connecting fire dynamics research to firefighter response strategy, tactics, and best practices. NFPA 1700, Section 4.2.1 discusses the importance in understanding fire dynamics and how it is applied to the context of structure fires. An understanding of this can assist fire officers and firefighters with the means and knowledge of how a fire will grow and spread within a structure and how best to control that growth. NFPA 1700, Section 4.3.2 describes the importance in the fundamental changes in fires today and how firefighters must have a strong understanding of how the building, furnishings, and ultimately how ventilation is affecting today's fires. NFPA 1403, Standard on Live Fire Training Evolutions, provides a list of prerequisite knowledge that firefighters must have prior to being permitted to participate in live fire training evolutions. The list includes topics on fire dynamics, fire development in a compartment, nozzle techniques and door control.

The UL Fire Safety Research Institute (FSRI) has resources that could be used to provide free online training to support hands on or face to face training. The FSRI course Evidence-Based Structural Firefighting, is based on NFPA 1700: Guide for Structural Firefighting.

In June 2024 the Fire Academy added Fire Dynamics to the BCFD Skills portion of recruit training.

Flow and Move

Initial attack and hand line operation with regards to the tactic of flowing water while advancing to the source of the fire was not utilized by Engine 29. The Officer and Pipe of Engine 29 entered the dwelling with a charged 1 ¾" handline and progressed through the first-floor front room in search of the seat of the fire without opening the nozzle in efforts of cooling the upper region of the compartment. EMT/FF Pitts and Captain Rinaldo were trained to the minimum MFRI curriculum. They were not exposed to or instructed on the tactic of flowing water while advancing to the seat of the fire necessary for the modern fire environment.

According to NFPA 1700, 2021 edition, advancing under or into a superheated smoke layer is an outdated tactic. However, this outdated tactic is still being taught in the Fire Academy as an approved tactic for fire suppression. NFPA 1700, section 10.5 Water, describes the utilization of water and hose stream tactics that are the most effective during a firefight. The preferred tactic is the utilization of a straight or smooth bore nozzle that utilizes large droplets and steep angles that will provide surface cooling and create gas contraction as the hose stream moves throughout the compartment. NFPA 1700, section 10.5.4.6, further describes safety considerations and what a firefighter should avoid when advancing under a superheated thermal layer without cooling or flowing water as they advance.

NFPA 1700, section 10.5.3 Exterior Control, outlines the best practices for an exterior attack. Once the fire has started burning on the exterior it is critical for firefighters to understand exterior fires cannot be effectively extinguished from the interior. Exterior fires can expose interior crews to high heat conditions. Exterior attack may be as simple as beginning to flow water through the front door from the porch as the crew is making entry.

In April 2024, the Fire Academy incorporated the Flow and Move concept during ALL recruit training.

Thermal Imaging Cameras

Thermal imaging cameras (TICs) were not utilized to their fullest potential and ability during initial size-up or initial tactics. The Officer of Engine 29 did not use the Draeger UCF 7000 thermal imager in the early minutes of the Linden Heights incident. The BCFD utilizes 3 different types of thermal imaging cameras. All seated positions have just recently been provided with a personal thermal imager; Seek Reveal Fire Pro, per Bulletin dated May 16, 2023. Additionally, the officer position, has/utilizes a Draeger UCF 7000 which was provided to Truck Company Officers since 2013 then added to the

Battalion Chief Vehicles on July 1, 2013 (Operations Memo 22-13) and provided to Engine Company Officers on November 9, 2015 (Operations Memo 13-15). Draeger's Fire Vista thermal imager has begun replacing the Draeger UCF 7000's as of spring 2025.

The BCFD recently issued Operation Memo 2-24 on February 8, 2024, requiring the carrying and use of the thermal imaging camera on all fires. The BCFD did not reinforce this Ops Memo with a training program that encompasses the features of the department's three thermal imaging cameras, the importance of their use, and the proper use of the thermal imaging camera when making tactical decisions.

Based on field members interviews for this incident, the other on-scene units did not utilize their thermal imaging cameras except for the Officer of Truck 12 during the rescue efforts. Additionally, the department did not provide thermal imaging training in 2015 when the Engine Companies were provided the thermal imaging cameras nor in 2023 when all additional riding positions received the Seek thermal imaging cameras. This is important to note because any new officer or member promoted or hired after 2013 has not received formal training in the department's three types of thermal imaging cameras.

A thermal imaging camera is a valuable tool and should be utilized during initial size-up and assessment as described in NFPA 1700, section 9.6. NFPA 1408 further explains training, usage, necessary annual review, and care and maintenance of a jurisdiction's thermal imaging camera program. NFPA 1408, Section 4.2.7 states that jurisdictions provide training and education before permitting the operation and use of the thermal imaging cameras by the firefighter. Any training course should include instruction on the NFPA 1408 Appendix materials for Sections 7.1.1, 7.1.6, and 7.17. This highlights the capabilities and the limitations of thermal imagers.

In June 2024, the Fire Academy added a TIC course as describe herein as part of Recruit BCFD Skills training.

SCBA

The SCBA and its facepiece are the weakest piece of equipment within our personal protective equipment ensemble. The BCFD's SCBA is currently compliant to NFPA 1981, 2007 edition standard. Both Officer and Pipe of Engine 29 experienced an SCBA emergency while the fire environment was changing inside the dwelling, causing a rapid and complete loss of the air supply in their cylinder.

NFPA 1404, Standard for Fire Service Respiratory Protection Training, lists the following key areas to be covered as part of training: Facepiece Failure, Breathing Regulator Malfunction (1st and 2nd Stage), Pressure Reducer Malfunction, and Air Depletion. Recruit training currently covers SCBA familiarization, but it does not go into the specific emergencies that parallel what our members faced in this incident.

In June 2024, the Fire Academy added a SCBA limitations course as described herein as part of Recruit BCFD Skills training.

PPE

NFPA 1700, Guide for Structural Fire Fighting contains a summary of the thermal conditions that the PPE components are tested to in Chapter 8, Fire-Fighting Protective Clothing and Equipment

Characteristics and Limitations. The specifications of the PPE issued to members of the Baltimore Fire Department should be included in the training. Comparisons of the temperatures and heat fluxes that occur during different stages of a fire can be made with the capacity of the PPE to absorb and manage the flow of heat.

The free online FSRI course, Evidence-Based Structural Firefighting, which is based on NFPA 1700: Guide for Structural Firefighting. https://training.fsri.org/course/109/evidence-based-structural-firefighting, has a module on Heat Transfer and PPE. This may serve to support the Fire Academy Course.

In June 2024, the Fire Academy added a PPE limitations course as described herein as part of Recruit BCFD Skills training.

RECOMMENDATIONS:

1. The BCFD should continue to implement the formal classes that started in April 2024 as a supplement to current, minimum recruit requirements that contain the following:
• Fire dynamics and how a fire behaves in various situations. • Background and basis for flowing water while maneuvering through a dwelling for extinguishment-emphasizing this tactic throughout ALL the recruit's initial training. • Thermal imaging-purpose, importance, proper use and limitations.
2. The BCFD should continue to supplement Recruit Training as started in June 2024 with content on: • SCBA emergencies and how members should operate should they encounter any one of the 4 major SCBA emergencies. • Issued PPE education with a focus on its capabilities, limitations, and its response to heat transfer in various fire environments.

PREVIOUS REPORT(S):

- Stricker Street, pp. 147-148
- Glover St
- Macon St. #13
- FACETS p. 83

REFERENCES:

- NFPA 1700: Guide to Structural Firefighting, 2021 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- NFPA 1408: Standard for Training Fire Servicer Personnel on the Operation, Care, Use and Maintenance of Thermal Imagers, 2020 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards

- NFPA 1981: Standard on Open Circuit Self Contained Breathing Apparatus (SCBA) for Emergency Services, 2019 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- NFPA 1404: Standard for Fire Service Respiratory Protection Training, 2018 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- BCFD Bulletin dated May 16, 2023: Seek Thermal Imaging Camera FireProX
- BCFD Operations Memo 22-13 dated June 28, 2013: Thermal Imaging Camera Deployment
- BCFD Operations Memo 13-15 dated November 9, 2015: Engine Company Thermal Imaging Cameras
- BCFD Operation Memo 2-24 dated February 8, 2024: Thermal Imaging Cameras

CAUSAL FACTOR: TRAINING #2 – RECRUIT FIELD TRANSITION

Summary: Newly graduated members should receive time to ride as the 5th member for both disciplines, Engine and Truck, with an assigned officer in a busy unit.

MOP 310

FACTS:

This was the first fire of consequence for EMT/FF Pitts. While he had responded to other smaller incidents, the magnitude of this fire was not something that he experienced prior and is nearly impossible to safely replicate in training. With only four personnel assigned to the unit, it is surmised that Captain Rinaldo was unable to give immediate direction to EMT/FF Pitts because he was performing crew tasks and supervising simultaneously. Capt. Rinaldo, having to work as a member of the crew and the supervisor, was pulling handline and correcting kinks immediately prior to joining EMT/FF Pitts in the building.

The Baltimore City Fire Department historically has probationary members ride on their assigned unit for their first ten (10) shifts, as well as ride on the 'opposite discipline' for an additional four (4) shifts as they transition from the Fire Academy to the field in accordance with MOP 310. This process was done with the member as part of the regular staffing compliment of four (4) personnel.

The policy to have the probationary member ride as a 5th, extra member, for accountability and experience was implemented with Operations Memo 06-24 dated August 9, 2024. This has given probationary members equal time to gain experience and train in this capacity for five 24-hour shifts each, respectively, on both Engine and Truck companies while being given direct guidance by senior members and supervisors. The exact direction given is subjective, as there is no clear policy for company officers on how to work with a 5th member.

Operations Memo 06-24 further requires the member to ride in their newly assigned company, preferable on a shift with an assigned officer. While this is an important part of transitioning to a new unit, it does not ensure the member will run any incidents that are actual fires. There is no guarantee the member will get any incident experience during this transition time, especially if they are assigned to a

unit that engages in fewer fires. The likelihood of this could be increased by detailing new members to busier units when they are completing their 5th member ride-along. Operations is currently following through with this process, but it is not in policy.

RECOMMENDATIONS:

1.	Ensure Operations Memo 06-24 is continued by updating MOP 310 to include the 5th member ride along process and direction for the company officer.
2.	Institutionalize in policy the process for Operations to move newly assigned recruits to ensure they are completing their 5th member ride along period at busier units

REFERENCES:

- BCFD MOP 310: Probationary EMT/ Firefighter
- BCFD Operations Memo 06-24: Recruits Riding as 5th, dated August 9, 2024

CAUSAL FACTOR: TRAINING #3 – RECRUIT & FIELD TRAINING: RADIOS

Summary: The BCFD should prepare new and veteran firefighters to function using muscle memory when it comes to operating their portable radio to declare an emergency.

FACTS:

On this incident, when the MAYDAY was declared, there was limited opportunity to activate the EAB to ensure that Captain Rinaldo and EMT/FF Pitts were able to communicate their messages. There were, nonetheless, radio transmissions made during their time in distress that were not pertinent to the MAYDAY. This could have resulted in radio transmissions from the distressed firefighters that were not delivered.

We know Captain Rinaldo had two rejected transmissions during the MAYDAY operations. We also know EMT/FF Pitts had 12 rejected transmissions. We believe EMT/FF Pitts' rejections were due to the radio cord's exposure to heat, creating contact of the wires and not the member trying to transmit. We make this assumption because the two times that the radio did get through, there was no message given.

Repeated training on high risk and low frequency situations is necessary to build muscle memory. The report of a MAYDAY from a firefighter in distress and subsequent communications is one of those situations. The BCFD has not taken steps to prepare new and veteran firefighters to function using muscle memory when it comes to operating their portable radio to declare such an emergency.

A review of previous line of duty death reports indicates a consistent failure of those in distress to use their portable radio Emergency Activation Button (EAB) and maximize their ability to transmit urgent messages. When that EAB is activated, the member in distress obtains "Ruthless Preemption" and their radio receives priority over the other subscribers on the network. This allows them to speak without interruption and knock others off the air should they press their radio push to talk (PTT) button. When a firefighter is in distress and a MAYDAY has been declared that priority on the talk group is paramount.

One notable case involved a captain who died while operating on a residential fire in Maryland in August of 2011. During the time when crews were responding to his MAYDAY, dispatch transcripts indicated 17 subscriber rejects where he was unable to transmit status updates relative to his situation. He did not activate his EAB nor was he directed to do so by Dispatch or Command. As a result, he did not have Ruthless Preemption and other radio chatter hindered his ability to communicate.

Training on this very basic technique is very limited. One reason why this is the case is the fact that, when the EAB is activated, the dispatch center receives an alert that must be acted upon by the dispatcher. It is not pragmatic during normal operations to continually activate the EAB to the extent where muscle memory is created. Additionally, a radio is needed for the firefighter to become acclimated to the operation of the EAB in harsh environments. Traditionally, BCFD recruits have not had enough radios for continual reinforcement of this skill.

1. The BCFD should ensure new and senior firefighters have the tools and opportunity to train in the operation of the radio in severe conditions. This training requires the following:
    - Require use of the EAB for new and veteran members
    - Training conducted while under stress
    - Dispatchers to work with the BCFD to ensure their response to an EAB activation is the byproduct of muscle memory as well.
    - Validate all the nuances associated with the activation of the EAB and outline what happens in a radio. (Training Manual). For example, every member should know what the term "Ruthless Preemption" is, how long it is maintained, what happens if two members concurrently activate their EAB and any other pertinent research findings relative to this technology.

RECOMMENDATIONS:

PREVIOUS REPORTS(S):

- Stricker St. p.135
- FACETS p. 83

REFERENCES:

- Captain Josh Laird LODD Report: https://www.fireengineering.com/wp-content/uploads/2023/08/8-18-2022-laird-after-action-report.pdf
- NIOSH Safety Bulletin: The Importance of Understanding and Training on the Portable Radio Emergency Alert Button (EAB) during a Mayday https://www.cdc.gov/niosh/docs/2023-100/default.html

CAUSAL FACTOR: TRAINING #4 – RECRUIT TRAINING - Fitness Trainers

Summary: The BCFD should create and designate a qualified BCFD Health and Fitness Coordinator to oversee a fitness training program, and coordinate Peer Fitness Trainers to reinforce the physical performance standards to ensure a healthy and successful career in firefighting.

FACTS:

To gather as much information as possible about the Linden Heights incident, a random group of Probationary Firefighters were chosen to be interviewed about their experiences at the Fire Academy. The selected individuals had attended the academy during the same time frame as EMT/FF Pitts. The interviews included a series of questions about their time at the academy, and some questions were open-ended. One notable finding was that 67% of those interviewed reported that the physical fitness standards both during and after the Fire Academy were unclear.

After a review of the evidence collected, there was no indication that the physical fitness of Captain Rinaldo or EMT/FF Pitts had any impact on this incident. The IR Team still feels this is a pertinent finding to address due to the impact of early fitness guidance on the overall health and wellness of members.

The IAFF recognizes the importance of Health and Wellness for firefighters with the Fit to Thrive (F2T) program. This program focuses on firefighters being more active, more often so they can perform on and off the job. The Peer Fitness Trainer is one role within the F2T framework which is recognized by NFPA 1580 (new in 2025, formerly 1582 and 1583) as an exercise professional.

Fire Academy Recruits engaged in Fitness Training

The BCFD launched a Health and Wellness Initiative in 2011, featuring a Health and Wellness Coordinator and Peer Fitness Trainers. The program's purpose was to provide participants with information about their current health and fitness levels, as well as areas for improving their personal wellness. The initiative aimed to create a comprehensive summary to help the department identify priorities for future fitness educational programs, with the goal of implementing an On-Duty Physical Training Program.

The BCFD Health and Wellness Initiative is no longer active. When the member that held the coordinator position separated from the BCFD in 2013 they were never replaced. The BCFD trained 14 members in the Peer Fitness Certification in 2012. All but one member that attended this class has either separated from the BCFD or did not maintain their biannual recertification process.

In January 2025 the BCFD had 16 members representing both the Firefighters (Local 734) and Fire Officers (Local 964) Unions attend a Fit to Thrive workshop as an extension of the Peer Fitness Trainer program. The course was grant funded through the Locals. The fact that these members are now certified is excellent, but there is no formal coordination effort or funding to ensure members maintain their certification. Without these two elements, the members are not likely to maintain their certification.

RECOMMENDATIONS:

1. The BCFD should create and designate a qualified BCFD Health and Fitness Coordinator to:
   - Administer physical performance evaluations. (See *Policy #9*)
   - Oversee an exercise and fitness training program in accordance with NFPA 1583.
   - Coordinate Peer Fitness Trainers to assist with health and fitness programs that can reinforce consistent physical performance standards for recruits and field members.

PREVIOUS REPORT(S):

- Calverton Rd. p. 116
- FACETS p. 87

REFERENCES:

- BCFD Job Announcement: EMT/Firefighter Dated June 2, 2023
- Bulletin: Wellness Program- Health Fitness Coordinator, Dated June 1, 2011
- NFPA 1580 Standard for Emergency Responder Occupational Health and Wellness (new 2025)
- NFPA 1583 Standard on Health-Related Fitness Programs for Fire Department Members, 2022
- NFPA 1582 Standard on Comprehensive Occupational Medical Programs for Fire Departments, 2022
- https://www.iaff.org/fit-to-thrive/

CAUSAL FACTOR: TRAINING #5 – FIELD RIT TRAINING

Summary: Current policy regarding the functions of the RIT team is designed for the RIT team only and not necessarily for any other unit on the fireground. Training for RIT operations, the "softening of the structure" prior to and during entry and the concept of PIT Crew RIT training should be afforded to all members. Reinforcement may be achieved through both policy and training utilizing both the truck and engine company operations in-service courses at the Fire Academy as well as the Academy in-service 2 and 1 training.

MOP 602-8

FACTS:

Upon Engine 52's arrival on the incident scene, the MAYDAY had just been declared. E52 was not afforded any time to perform any actions that would assist members inside should they have needed to exit expeditiously such as removing window bars. Though the entire incident, as most are, was very dynamic, there are steps that can be taken by units on the fireground to ensure the safe egress of our members. These functions should not be limited to the truck companies only on the scene.

The removal of the security devices on the 1st floor porch window was not made initially. The RIT engine was dispatched third but was fifth to arrive on the incident. There was opportunity to remove the bars earlier in the incident by other units. Our current practice within the directions of MOP 602-08 *Rapid Intervention Team* do not currently reinforce that best practice. Pages 3 and 4 of the aforementioned MOP delineate the responsibilities of the RIT Team including softening of the structure. It is written solely for the 3rd engine (RIT) company and not any other units.

RECOMMENDATION:

1. Update MOP 602-8 to be inclusive of any/all units on the fireground that recognize potential dangers impeding firefighter egress in the event of a MAYDAY. Reinforce updated policy by instituting the following:
   - Conduct training tailored to the RIT processes described within. The processes include but are not limited to security bar removal, deployment of additional ground ladders, etc. This training can be conducted through both the Fire Academy during in-service training and at the company level.
   - Combine the recommendation here with another in this document – *Policy # 5, PIT Crew RIT Operations.* This will reinforce the training and provide the members a "team" approach to RIT Operations.
   - Combine the recommendations here with another in this document – *Policy # 11, Risk Assessment.* Combined, these recommendations will provide not only the initial company officer on an incident, but all members the training and opportunity to recognize potential hazards to egress and rectify those immediately, even prior to entry if necessary.

PREVIOUS REPORT(S):

- Calverton Rd. p. 70
- Stricker St. pp. 127-132
- Liberty Heights #8
- Macon St. #14
- FACETS p. 83
-

REFERENCES:

- BCFD MOP 106-3: SHIFT SAFETY OFFICER – DUTIES
- BCFD MOP 106-2: SAFETY AND HEALTH OFFICER
- BCFD MOP 602-1: FIREGROUND OPERATIONS – ENGINE
- BCFD MOP 602-2: FIREGROUND OPERATIONS – TRUCK
- BCFD MOP 602-8: RAPID INTERVENTION TEAM, 2 IN 2 OUT

CAUSAL FACTOR: TRAINING #6 – FIELD TRAINING

Summary: The BCFD should establish and implement formal classes on the following topics for all incumbent fire suppression members:

- Fire dynamics and how a fire behaves in various situations
- Background and basis for flowing water while maneuvering through a dwelling for extinguishment; emphasizing this tactic throughout ALL of the recruit's initial training
- Thermal imaging - purpose, importance, proper use and limitations
- SCBA emergencies and how members should operate should they encounter any one of the 4 major SCBA emergencies
- Issued PPE education with a focus on its capabilities, limitations, and its response in various fire environments to heat transfer
- Lessons learned from Baltimore City Fire Department close calls/near misses and Line of Duty Deaths as well as relevant incidents throughout the country

FACTS:

Current Field Training

The BCFD trains incumbent members while on-shift in multiple ways. Battalion training is held when a member is working on a Sunday and led by the Battalion Chief based on a predetermined topic selected by the Deputy Chief of Training. The Fire Academy administers 2 and 1 training to on-duty field units in a 3-hour session. The session covers a series of current topics that change every 6 months. The Fire Academy also administers FOCAS Lab training to Battalion Chiefs and Captains, allowing members to practice Incident Command in varying simulations.

2 and 1 training at the Fire Academy

The Fire Academy also administers AFR - Advanced Firefighter Removal course to field members. This course uses case studies to re-create LODDs. It allows members to physically and mentally work through the problem-solving associated with firefighter rescue in a high-stress training environment. The BCFD has conducted this course 9 times since May 2023, having trained 180 members so far. This course is grant funded, and funds are available to deliver 5 additional classes to 100 students. It is optional and offered on overtime while members are off duty. Members who are scheduled to work during class dates are detailed off of their shift.

The Fire Academy offers a course called HEAT - Higher Education & Advanced Tactics, which started in March 2024. This class was originally only offered to Fire Officers but has expanded to firefighters and is now part of recruit training during BCFD Skills in 2024. The course covers Fire Dynamics, Building Construction, and Thermal Imaging Camera Training. The Fire Academy has trained 214 members as of October 2025. The course is grant funded, and there are funds available to continue at least 4 more classes. It is optional and members are compensated with overtime while off-duty but members who are scheduled to work during class dates may be detailed from their shift.

A second week of the HEAT course is OHPUS- Optimizing Human Performance Under Stress. Originally held with HEAT, OHPUS is now offered as a separate class. This course is also grant funded and directed towards Fire Officers. It focuses on how the member responds to stress mentally, emotionally, and physically. It also offers opportunities to practice managing stress using the tools learned in a controlled training environment.

Fire Dynamics

During the past 20 years there has been a significant amount of information developed about the changes on the fireground and why firefighting tactics need to adjust. Previous training was based on limited and in some cases, outdated information on fire dynamics/fire behavior and ultimately what leads to a rapidly changing fire environment. There are no other required class or course work that specifically prepares chiefs, officers, and firefighters for these events or the prediction of these events. The Officer and Pipe of Engine 29 made entry into the dwelling not realizing that the conditions were rapidly changing. This ultimately led to them being caught in a high heat environment.

NFPA 1700, published in 2021, is the first NFPA document connecting fire dynamics research to firefighter response strategy, tactics, and best practices. NFPA 1700, Section 4.2.1 discusses the importance in understanding fire dynamics and how it is applied to the context of structure fires and how that understanding can assist fire officers and firefighters with the means and knowledge of how a fire will grow and spread within a structure and how best to control that growth. NFPA 1700, Section 4.3.2 describes the importance in the fundamental changes in fires today and how firefighters must have a strong understanding of how the building, furnishings, and ultimately how ventilation is affecting today's fires. NFPA 1403, Standard on Live Fire Training Evolutions, provides a list of prerequisite knowledge that firefighters must have prior to being permitted to participate in live fire training evolutions. The list includes topics on fire dynamics, fire development in a compartment, nozzle techniques and door control.

The UL Fire Safety Research Institute (FSRI) has resources that could be used to provide free online training to support hands on or face to face training. The FSRI course Evidence-Based Structural Firefighting, is based on NFPA 1700: Guide for Structural Firefighting.

In March 2024 the Fire Academy initiated its H.E.A.T course for field members focusing on 2 days of Fire Dynamics.

Initial attack and hand line operation with regards to the tactic of flowing water while advancing to the source of the fire was not utilized by Engine 29. The Officer and Pipe of Engine 29 entered the dwelling with a charged 1 ¾" handline and progressed through the first-floor front room in search of the seat of the fire without opening the nozzle in efforts of cooling the upper region of the compartment. EMT/FF Pitts and Captain Rinaldo were trained to the minimum MFRI curriculum. They were not exposed to or instructed on the tactic of flowing water while advancing to the seat of the fire necessary for the modern fire environment.

According to NFPA 1700, 2021 edition, advancing under or into a superheated smoke layer is an outdated tactic. However, this outdated tactic is still being taught in the Fire Academy as an approved tactic for fire suppression. NFPA 1700, section 10.5-Water, describes the utilization of water and hose stream tactics that are the most effective during a firefight. The preferred tactic is the utilization of a straight or smooth bore nozzle that utilizes large droplets and steep angles that will provide surface cooling and create gas contraction as the hose stream moves throughout the compartment. NFPA 1700, section 10.5.4.6, further describes safety considerations and what a firefighter should avoid when advancing under a superheated thermal layer without cooling or flowing water as they advance.

NFPA 1700, section 10.5.3-Exterior Control, outlines the best practices for exterior attack. Once the fire has started burning on the exterior it is critical for firefighters to understand exterior fires cannot be effectively extinguished from the interior. Exterior fires can expose interior crews to high heat conditions. Exterior attack may be as simple as beginning to flow water through the front door from the porch as the crew is making entry.

In September 2024, the Engine Company Operations in-service training began at the Fire Academy focusing on flow and move techniques and tactics for field members.

Thermal Imaging Cameras

Thermal imaging cameras (TICs) were not utilized to their fullest potential and ability during initial size-up or initial tactics. The Officer of Engine 29 did not utilize the Draeger UCF 7000 thermal imager in the early minutes of the Linden Heights incident. The BCFD utilizes 3 different types of thermal imaging cameras. All seated positions have just recently been provided with a personal thermal imager; Seek Reveal Fire Pro, per Bulletin dated May 16, 2023. Additionally, the officer position, has/utilizes a Draeger UCF 7000 which was provided to Truck Company Officers since 2013, then to the Battalion Chief Vehicles on July 1, 2013 (Operations Memo 22-13) and provided to Engine Company Officers on November 9, 2015 (Operations Memo 13-15). Draeger's Fire Vista thermal imager has begun replacing the Draeger UCF 7000's as of spring 2025.

The BCFD recently issued Operation Memo 2-24 on February 8, 2024, requiring the carrying and use of the thermal imaging camera on all fires. However, the BCFD did not reinforce this Ops Memo with a

training program that encompasses the features of the department's three thermal imaging cameras, the importance of their use, and the proper use of the thermal imaging camera when making tactical decisions.

Based on field members interviews for this incident, the other on-scene units did not utilize their thermal imaging cameras except for the Officer of Truck 12 during the rescue efforts. Additionally, the department also did not provide thermal imaging training in 2015 when the Engine Companies were provided the thermal imaging cameras nor in 2023 when all additional riding positions received the Seek thermal imaging cameras. This is important to note because any new officer or member promoted or hired after 2013 has not received formal training in the department's three types of thermal imaging cameras.

A thermal imaging camera is a valuable tool and should be utilized during initial size-up and assessment as described in NFPA 1700, section 9.6. NFPA 1408 further explains training, usage, necessary annual review, and care and maintenance of a jurisdiction's thermal imaging camera program. NFPA 1408, Section 4.2.7 states that jurisdictions provide training and education before permitting the operation and use of the thermal imaging cameras by the firefighter. Any training course should include instruction on the NFPA 1408, Appendix materials for Sections 7.1.1, 7.1.6, and 7.17 which highlights the capabilities and the limitations of thermal imagers.

In March 2024 the Fire Academy added a TIC course as describe herein as part of the H.E.A.T course geared towards field personnel. In addition, this same TIC course is part of the AFR course that began in March 2024.

SCBA

The SCBA and its facepiece are the weakest piece of equipment within our personal protective equipment ensemble. The BCFD's SCBA is currently compliant to NFPA 1981, 2007 edition standard. Both Officer and Pipe of Engine 29 experienced an SCBA emergency while the fire environment was changing inside the dwelling causing a rapid and complete loss of the air supply in their cylinders.

NFPA 1404, Standard for Fire Service Respiratory Protection Training lists the following key areas to be covered as part of training: Facepiece Failure, Breathing Regulator Malfunction (1st and 2nd Stage), Pressure Reducer Malfunction, and Air Depletion. Recruit training currently covers SCBA familiarization, but it does not go into the specific emergencies that parallel what our members faced in this incident.

In March 2024, the Fire Academy added a SCBA limitations course as described herein as part of the H.E.A.T course for field members.

PPE

NFPA 1700, Guide for Structural Fire Fighting contains a summary of the thermal conditions that the PPE components are tested to in Chapter 8, Fire-Fighting Protective Clothing and Equipment Characteristics and Limitations. The specifications of the PPE issued to members of the Baltimore City Fire Department should be included in the training. Comparisons of the temperatures and heat fluxes that occur during different stages of a fire can be made with the capacity of the PPE to absorb and manage the flow of heat.

The free online Fire Safety Research Institute course, Evidence-Based Structural Firefighting, which is based on NFPA 1700: Guide for Structural Firefighting, has a module on Heat Transfer and PPE. This may serve to support the Fire Academy Course.

In March 2024, the Fire Academy added a PPE limitations course as described herein as part of the H.E.A.T course for field members.

"Lessons Learned" Training

The Baltimore City Fire Department has had eight (8) non-medical line of duty deaths over the last 20 years. The purpose of discussing these incidents is simple... so that we as a department do not repeat them. These incidents should drive changes in strategies and tactics. We must ensure that the lessons learned from these past incidents are not forgotten. A problem identified is only a lesson learned if we, as a department, change the actions or culture because of it. The lessons learned from these incidents should be used for company drills so that we can continue the flow of knowledge and reinforce new information.

From 1999 through 2014, NIOSH developed LODD reports on 26 fires where firefighters were operating or caught in the exhaust portion of a flow path and were overtaken by high heat conditions. In these fires, 29 firefighters were killed, and 43 firefighters were injured. These incidents are listed and referenced in the report: Understanding and Fighting Basement Fires. The fire dynamics of several of these fires have been studied and videos about the incidents have been developed. They are listed in the "Resources" section.

Lessons learned can also include success stories. It is important to incorporate "what good looks like" into company training. The Fire Academy is currently doing this with their Training Days publications.

RECOMMENDATIONS:

1. The BCFD should continue to reinforce key concepts for field personnel currently taught during the optional H.E.A.T and AFR courses including:

    - Fire dynamics with emphasis on ventilation limited fires, ventilation induced flashovers, understanding how unidirectional and bidirectional gas flows in a path by the position of the neutral plane, backdrafts, smoke explosions and fire attack with coordination of ventilation.
    - Maneuvering while flowing water through a dwelling for extinguishment, emphasizing this tactic throughout ALL future BCFD training. This practice should be reinforced during any course offered at the Fire Academy as well as unit and battalion level training.
    - Thermal imaging cameras to include familiarization of the department's cameras and their importance, correct uses and limitations under fire conditions.
    - Lessons learned from previous BCFD close calls, near misses and Line of Duty Deaths.

2. The BCFD should establish and implement formal classes for field personnel that contain:

    - SCBA emergencies and how members should operate should they encounter any one of the 4 major SCBA emergencies.

- Issued PPE education with a focus in its capabilities, limitations and its response to heat transfer in various fire environments.

PREVIOUS REPORT(S):

- Stricker Street, pp. 128,136,145-149
- Liberty Heights #8
- East Ave. #11, #13
- Macon St. #13
- FACETS p. 83

REFERENCES:

- NFPA 1700: Guide to Structural Firefighting, 2021 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- NFPA 1408: Standard for Training Fire Servicer Personnel on the Operation, Care, Use and Maintenance of Thermal Imagers, 2020 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- NFPA 1981: Standard on Open Circuit Self Contained Breathing Apparatus (SCBA) for Emergency Services, 2019 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- NFPA 1404: Standard for Fire Service Respiratory Protection Training, 2018 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- BCFD Bulletin dated May 16, 2023: Seek Thermal Imaging Camera FireProX
- BCFD Operations Memo 22-13 dated June 28, 2013: Thermal Imaging Camera Deployment
- BCFD Operations Memo 13-15 dated November 9, 2015: Engine Company Thermal Imaging Cameras
- BCFD Operation Memo 2-24 dated February 8, 2024: Thermal Imaging Cameras
- Fire Safety Research Institute: Evidence-Based Structural Firefighting https://training.fsri.org/course/109/evidence-based-structural-firefighting
- Understanding and Fighting Basement Fires, https://d1gi3fvbl0xj2a.cloudfront.net/files/2021-07/Understanding_and_Fighting_Basement_Fires.pdf with case study video access:
    - Cherry Road Washington D.C. 1999, https://vimeo.com/248353696
    - Keokuk Iowa 1999, https://www.youtube.com/watch?v=7vz67z2Cufo
    - Diamond Heights, San Francisco, CA 2011, https://www.youtube.com/watch?v=pgDbsv62cu8
    - Chicago, IL., 2012, https://www.youtube.com/watch?v=nY3JO_Kf9Qk

CAUSAL FACTOR: TRAINING #7 – ACQUIRED STRUCTURE TRAINING

Summary: The BCFD should develop a policy and practice for training with acquired or loaned structures to provide members with:

- Fire dynamics and how a fire behaves in structures with a realistic fuel (no interior operations).
- Company training drills on size-up, forcible entry, ladder placement, hose stretches, and water supply (no fire).
- Multi-company drills to practice coordinated operations (no fire).
- Live-fire training to develop skills under more realistic conditions.
- Enhanced Officer Training under more realistic conditions.

FACTS:

A resulting factor of the 2007 Line of Duty Death of Rachel Wilson (NIOSH F2007-09) was Operations Memo 23-2007 (Revised) and MOP 115-1 Battalion Level Training Program, which eliminated live fire training in acquired structures. In October 2023 and again in March 2024, a series of emails stemming from the Assistant Chief of Operations and the Shift Commander's Office eliminated any fire department unit from training being conducted in the interior of or on the exterior of any vacant building unless cleared by the Assistant Chief of Operations. Liability limitations make realistic training difficult. This education is necessary to gain experience in true conditions that members will be faced with in the field.

The Officer and Pipe of Engine 29 made entry into the dwelling while conditions were rapidly changing. They were ultimately caught in a high heat environment. In today's fire environment, modern day fuels and how they accelerate the fire's dynamics must match the tactics needed for suppression; for instance, flow and move, the concept of smoke equals fire, and cooling the ceiling atmosphere while advancing. In April 2024 the BCFD introduced these concepts to recruits. Prior to that, the Fire Department was utilizing older tactics for the suppression of legacy fires but in the modern fire environment. This included crawling into the structure and not applying water until the seat of the fire was located. Training members for realistic fire environments is difficult when utilizing a familiar fire training structure with excelsior and pallets as fuel.

Current Field Training

The BCFD trains incumbent members while on-shift in multiple ways. Battalion Training is held when a member is working on a Sunday and led by the Battalion Chief based on a predetermined topic selected by the Deputy Chief of Training. The Fire Academy administers 2 and 1 training to on-duty field units in a 3-hour session. The session covers a series of current topics that change every 6 months. The Fire Academy also administers FOCAS Lab training to Battalion Chiefs and Captains, allowing members to practice Incident Command in varying simulations.

The Fire Academy also administers AFR - Advanced Firefighter Removal course to field members. This course uses case studies to re-create LODDs. It allows members to physically and mentally work through the problem-solving associated with firefighter rescue in a high-stress training environment. The

BCFD has conducted this course 9 times since May 2023, having trained 180 members so far. This course is grant funded, and funds are available to deliver 5 additional classes to 100 students. It is optional and offered on overtime while members are off duty. Members who are scheduled to work during class dates are detailed off of their shift.

The Fire Academy offers a course called HEAT - Higher Education & Advanced Tactics, which started in March 2024. This class was originally only offered to Fire Officers but has expanded to firefighters and is now part of recruit training during BCFD Skills in 2024. The course covers Fire Dynamics, Building Construction, and Thermal Imaging Camera Training. The Fire Academy has trained 214 members as of October 2025. The course is grant funded, and there are funds available to continue at least 4 more classes. It is optional and members are compensated with overtime while off-duty but members who are scheduled to work during class dates may be detailed from their shift.

A second week of the HEAT course is OHPUS- Optimizing Human Performance Under Stress. Originally held with HEAT, OHPUS is now offered as a separate class. This course is also grant funded and directed towards Fire Officers. It focuses on how the member responds to stress mentally, emotionally, and physically. It also offers opportunities to practice managing stress using the tools learned in a controlled training environment.

While Fire Academy-based training provides BCFD members with foundational training, the facilities do not generate conditions that reflect the fire conditions, fire spread, and structural conditions encountered in the field.

Fire Dynamics

During the past 20 years there has been a significant amount of information developed about the changes on the fireground and why firefighting tactics need to adjust. Previous training was based on limited, and in some cases, outdated information on fire dynamics/fire behavior and ultimately what leads to a rapidly changing fire environment. There are no other required class or course work that specifically prepare chiefs, officers, and firefighters for these events or the prediction of these events.

NFPA 1700, published in 2021, is the first NFPA document connecting fire dynamics research to firefighter response strategy, tactics, and best practices. NFPA 1700, Section 4.2.1 discusses the importance in understanding fire dynamics and how it is applied to the context of structure fires and how that understanding can assist fire officers and firefighters with the means and knowledge of how a fire will grow and spread within a structure and how best to control that growth. NFPA 1700, Section 4.3.2 describes the importance in the fundamental changes in fires today and how firefighters must have a strong understanding of how the building, furnishings, and ultimately how ventilation is affecting today's fires. Further NFPA 1403, Standard on Live Fire Training Evolutions, provides a list of prerequisite knowledge that firefighters must have prior to being permitted to participate in live fire training evolutions. The list includes topics on fire dynamics, fire development in a compartment, nozzle techniques and door control.

Creating the opportunity for fire fighters and fire officers to observe fire development through an acquired structure provides experience that cannot usually be obtained in structures specifically designed for repeated live fire training. Depending on the structure and its condition, observations provide knowledge on size-up, impact of the location of the fire, the speed of fire growth, the impact of the structure's geometry and ventilation, flow paths, time to structural collapse, and exterior fire control

tactics. While there are textbook and video resources to support gaining insight into fire dynamics, there is no replacement for firsthand observations of fire phenomena.

Simply by observing how a fire grows, propagates, and smoke mixing with oxygen throughout a building is just as valuable as sometimes the action of extinguishment itself. It gives the observer the knowledge and the "why" of how the fire is developing and more importantly where the fire wants to go. As an example, Underwriters Laboratories (UL) Fire Safety Research Institute conducts training burns on structures and has its students completely hands off, observing the fire phenomena from a distance away. This model of education of observing fire dynamics and its movement and pairing it with the tactile evolutions of training needs to become the norm.

Company Skill Drills

NFPA 1410 provides fire departments with an objective method of measuring performance for fire suppression and rescue procedures using available personnel and equipment. NFPA 1410 brings together the fire dynamics knowledge required by NFPA 1010, NFPA 1403 and highlighted by NFPA 1700 to enable the first due company to size-up, select a strategy, and conduct engine and truck company operations.

For an individual engine company, an acquired or loaned structure in the city, can provide a size-up implementation opportunity, based on a proposed fire scenario, accessing the structure, along with obtaining a water supply, placing one initial attack line into operation, and providing backup with another line. Operating around and in acquired structures provides a more realistic environment that does not exist at the Fire Academy such as maneuvering a hose line over curbs, around fences, and upstairs to porches prior to entry into the structure.

For an individual truck company, an acquired or loaned structure in the city, can provide a size-up implementation opportunity, based on a proposed fire scenario, accessing the structure, raising ladders, transporting equipment, setting up lights and fans, and carrying out other truck company duties, such as forcible entry, and search and rescue. Operating around and in acquired structures provides a more realistic environment that does not exist at the Fire Academy like carrying and setting ground ladders over uneven ground or raising ladders to porch or building roofs.

Multi-company Drills

In addition to providing the training, education, and skills development/retention of company drills, it enables company members to identify correct coordination of tactics between engine and truck company operations, as required by NFPA 1410. As every fire incident results in a multi-company operation, it is critical to provide multi-company training.

Live-fire training

Acquired structures can provide different and more realistic fire scenarios than the scenarios available from structures at the training academy which the BCFD fire suppression field personnel have been through. In structures that can be prepared to meet the requirements of NFPA 1403 including but not

limited to the inspection of the structure shall be made to determine that the floors, walls, stairs, and other structural components are capable of withstanding the weight of contents, participants, accumulated water, and the removal of hazardous materials and environmental conditions.

NFPA 1403 provides requirements on the type of fuels to be used and the requirements and guidance for the operational plan for accomplishing training objectives with a ventilation-controlled fire/flow path control and fire control training, utilizing a fuel load that could generate a controlled flashover.

Live fire training can be part of in-service training programs to enhance officer training in Immediately Dangerous to Life and Health (IDLH) atmospheres. Operating in acquired structures will provide officers with opportunities to make critical decisions in controlled, stressful environments, better preparing them for real world scenarios.

RECOMMENDATION(S):

1. The BCFD should rescind Operations Memo 23-07 and revise MOP 115-1 to develop a policy and practice for training with acquired or loaned structures for three purposes:
   - To observe the stages of fire and its growth or modern fuels with no interior extinguishment.
   - To use for company and multi-company drills (ladders, hose-lines, etc.) with no live fire.
   - To conduct live fire training compliant with NFPA 1403 to develop improved knowledge about size-up, fire dynamics, coordination of ventilation, suppression tactics and fire control as identified by NFPA 1010, 1021, 1403 and 1700.
2. Required elements of an updated acquired structure policy would include:

   - Field units and Fire Academy Instructors will be responsible for prep and extinguishment (exterior) throughout the fire lab at the direction of the group overseeing the Acquired Structure Program.
   - City Housing to provide the Fire Department with a list of dwellings throughout the city that can be used in each of the three categories identified.

PREVIOUS REPORT(S):

- Calverton Rd. pp. 41- 73
- Macon St. #13
- NIOSH F2007-09

REFERENCES:

- NFPA 1700: Guide to Structural Firefighting, 2021 edition, In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards

- NFPA 1410: Standard on Training for Emergency Scene Operations, 2020 edition, In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- NFPA 1403: Standard on Live Fire Training Evolutions, 2018 edition, In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- NFPA 1010: Standard on Professional Qualifications for Firefighters, 2024 edition, In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- NFPA 1021: Standard for Fire Officer Professional Qualifications, 2020 edition, In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- BCFD Operations Memo 23-2007 revised 6.29.2007
- BCFD Emails

CAUSAL FACTOR: TRAINING #8 – MOBILE/ELECTRONIC FIELD TRAINING

Summary: On-duty training for field members is limited by competing daily tasks and the proximity to the Fire Academy. Training methods should be updated so that they are easily accessible and mobile.

FACTS:

Up to 6 companies are placed out of service every Monday and Friday for training conducted at the Fire Academy, which is located at the eastern border of Baltimore City and Baltimore County at 6720 Pulaski Highway as part of 2 and 1 training. This training covers seasonal, pertinent topics. In addition, 4 units are placed out of service on Wednesdays and Thursdays for Truck and Engine Operations training. The quality and frequency of training in the BCFD has increased greatly over the last 10 years and should be considered a successful improvement.

While some training topics must be conducted at the Fire Academy and are quite necessary, there are many topics that could be mobile and brought to the units instead of having units' travel. The academy staff and adjunct instructors would be able to reach more members, more frequently. This would enhance members ability, give a higher connection from the field to the Fire Academy, and keep units from being out of service for extended periods, which alleviates additional strain on Operations.

The Fire Academy conducted remote training on the 2:1 Firefighter Removal System in October 2023. This training reached the entire department in less than two months, and it was conducted only on weekends. This was well received by the field and quickly implemented. This process should be repeated for other training topics that can be completed remotely.

Adding technology to trainings, such as QR codes for videos and policies, gives members the ability to access training resources on their own accord, giving the ability to perform self-study. This technology can include monthly drills and more specificity than the monthly battalion topics and help our officers gain further traction in conducting drills and teaching members on a more regular basis.

BCFD members training on 2:1 Firefighter Removal System

The Fire Academy is already working on this with the inclusion of videos and QR codes in Training Manual publications. They also embed videos with QR codes in their Training Days publications. Training Days take lessons learned from actual incidents and expands on best practices to share with the entire Fire Department.

RECOMMENDATIONS:

1. On-duty training for field members should be updated to be mobile as the topic allows. This was done in October 2023 for the 2:1 Rope Systems and it should be continued.
2. Ensure QR codes and current technologies are used to assist members with self-study. Training Manuals and Training Days publications are currently doing this, and it should be continued.

PREVIOUS REPORT(S):

- Stricker St. p. 147
- FACETS p. 83

CAUSAL FACTOR: TRAINING #9 – COMMAND TRAINING

Summary: The Fire Officer Command and Simulation (FOCAS) Lab enhanced the skillset of the Incident Commander to manage a high-stress incident based on education and experience.

FACTS:

The limited training opportunities for members to operate in high-stress environments contributes to the challenges faced during operational activities. Enhancing continuing education programs supported by the Fire Academy provides members with an enhanced skillset, preparing them for the urban Fire Officer mindset specific to BCFD.

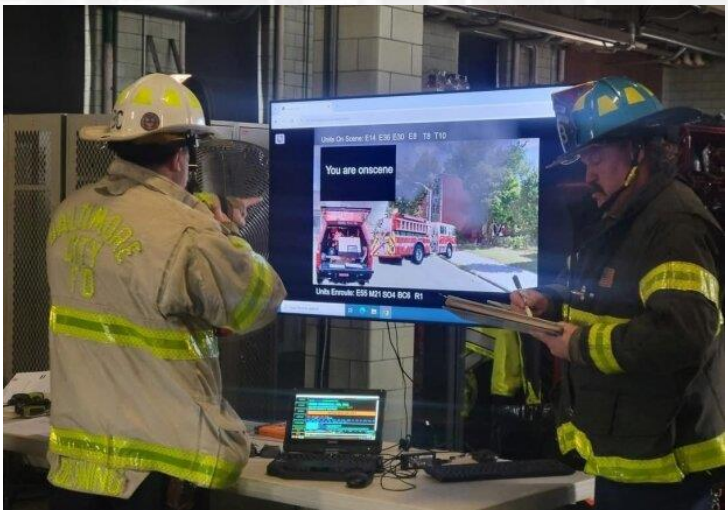
The FOCAS lab provides simulated live incident training for Battalion Fire Chiefs, allowing them the opportunity to maintain skills similar to real-life experiences. These capabilities are attributed to the training and experiences the member has accumulated prior to the incident.

The Linden Heights Incident Commander, under extremely stressful conditions, managed the MAYDAY in accordance with the department's policies and procedures while attempting to stop the fire from spreading. Additionally, he maintained a command presence while simultaneously directing resources to the MAYDAY and fire attack. It was apparent that the FOCAS Lab assisted in the successful handling of the MAYDAY at the command level.

CAR5 attempted to move the incident in another direction compared to the Incident Commander's established strategic objectives. This led to lack of coordination in the command structure. CAR5 did not take command, remaining in a supportive, advisory role. Relieving a task saturated Incident Commander upon arrival decreases the opportunity for further stressors.

In 2021, the BCFD provided grant funded Officer Development Training composed of a curriculum for an extensive list of Administrative and Operational tasks. Operational training included giving brief-initial reports and identifying strategies and tactics. That program has come to an end. The BCFD does not provide continuing education for members outside the rank of Battalion Fire Chief or acting Battalion Chief roles to develop and maintain a skillset for critical decision-making skills at escalating incidents.

According to NFPA 1561, Chapter 20, Section 20.2.3, team members shall be trained together with full-scale exercises and simulations of sufficient number to develop their proficiency and allow them to maintain the necessary skills.



BCFD Command Simulations (FOCAS Lab)

The goal of simulation-based training is to provide anyone that might serve as a command officer with the knowledge and tools to ensure effective operations and provide challenges to evoke a startle response in a controlled environment. Utilizing interactive simulations to conduct sets and reps to practice "size-up and arrival reports, hazard recognition, building construction, resource management, risk assessment, decision making, radio protocol, apparatus positioning, initial tactics and task initiation in divisions and groups, multiple alarm transition processes and post-incident analysis" [1].

RECOMMENDATION:

1. Continue and expand FOCAS Lab to provide leadership and command training to all levels of supervision, including unit officers, Battalion Chiefs and Shift Commanders with specific emphasis on decision making and incident management.

PREVIOUS REPORT(S):

- Stricker St. pp. 119,149
- Glover St.
- East Ave #13

REFERENCES:

- NFPA 1561: Standard on Emergency Services Incident Management System and Command Safety, Chapter 20. 2020 Edition. In NFPA Codes and Standards Online. Retrieved from https://www.nfpa.org/codes-and-standards
- Cabral, A., *Promoting firefighter safety and effective incident management through command training centers*., EFO Paper, National Fire Academy, Emmitsburg, MD.,2008.

CAUSAL FACTOR: TRAINING #10 – PO/EVD TRAINING

Summary: The fire department should reevaluate its training policies, procedures, educational requirements, and career development pathway for the positions of Pump Operator (PO) and Emergency Vehicle Drivers (EVD) to include the acting-out-of-title approvals for those same positions listed above.

FACTS:

The basic knowledge, understanding, and practical aptitude of hydraulics, fluid dynamics, pump theory, apparatus positioning and placement, and basic job-related functions of pumping fire apparatus or operating aerial apparatus is severely lacking throughout the fire department's skill set. This deficiency is strongly supported by the one-on-one interviews taken post incident with the PO's and EVD's, both promoted and acting-out-of-title, that responded and operated on the scene.

Engine 20's acting-out-of-title PO positioned the apparatus twice. On both occasions, blocking all remaining apparatus that followed Engine 20 in the arrival sequence including the 1st assigned truck company from accessing the 5200 blk of Linden Heights Avenue. Additionally, multiple tenured promoted POs as well as acting-out-of-title POs stated that they were unsure in their understanding of fireground hydraulics. This included the differences between gallons per minute (GPM) needed for the different nozzles and tips the department provides, how friction loss in hose is calculated in order to produce the correct fire flow at the nozzle, and the total pump discharge pressure needed to operate specific nozzles in pounds per square inch (PSI) to achieve the appropriate GPM rated for those nozzles.

The current departmental requirements for the promotion to Pump Operator or Emergency Vehicle Driver with regards to education and training of those positions is currently satisfied through the completion of the acting-out-of-title manual (PO or EVD). The current departmental requirements for the acting-out-of-title approval for both PO and EVD with regards to education and training of those positions is currently satisfied only through the completion of the acting-out-of-title manual (PO or EVD) which is generally completed by the 18-month mark in a member's career. Upon completion of the manual, members are assessed uniformly on benchmarks for the respective position by a Fire Academy staff member as outlined in MOP 342-3.

The department's current process and acting-out-of-title manual is not sufficiently preparing members on how to operate fire pumps or aerial apparatus effectively on fire scenes as supported by members interviews. This lack of general knowledge and understanding is cyclical in nature and compounded by the process by which members are currently trained and educated. Simply stated, proper training and knowledge is not being disseminated because those who are responsible for enacting that training do not have the appropriate knowledge base themselves. This process has led to a negatively impacted training scar of two of the most basic yet important aspects of the fireground; apparatus positioning and fire ground hydraulics.

RECOMMENDATIONS:

1. The BCFD to implement a new training outline that will include all current, acting and newly promoted PO's and EVD's that considers the following training requirements listed below:

    - MFRI Pumping Apparatus Driver/Operator and/or MFRI Aerial Apparatus Driver/Operator
    - Completion of the BCFD PO and EVD Acting Out of Title Manual(s).
    - Testing and evaluation of the above disciplines at conclusion of the 1-week Pump and/or Aerial schools.
    - Annual evaluations for anyone approved or promoted in the PO or EVD positions at the Fire Academy and administered by the same group responsible for instructing the Pump and/or Aerial schools.

REFERENCES:

- BCFD MOP 342-3: EMERGENCY VEHICLE DRIVER & PUMP OPERATOR- ACTING APPROVAL

CAUSAL FACTOR: TRAINING #11 – FACILITIES

Summary: Members should have the ability to shower after completing live fire evolutions regardless of gender and rank.

FACTS:

Interviews with previous recruits that attended the Fire Academy with EMT/FF Pitts revealed recruits are unable to shower after live fire training due to the limited number of shower stalls. This is true for both males and females. There are private instructor bathrooms that have single showers that Fire Academy staff members can use, but this is not sufficient for an entire recruit class. Instead of showers, recruits are provided decontamination wipes to remove soot and debris from critical areas after training.

The BCFD recognizes showering after a fire is part of cancer prevention efforts for field members. Field members are allotted 15 minutes to clean up after a fire upon returning to the station. Saunas are also provided for members with directions to first shower, then use the sauna for 15-20 minutes, then shower again.

Showering is a basic hygiene need that should be instituted during initial training.

RECOMMENDATION:

1. Install showers so all participants of live fire training can shower after live fire training regardless of rank and gender.

PREVIOUS REPORT(S):

- Stricker St. p. 152

CAUSAL FACTOR: HUMAN PERFORMANCE

INTRODUCTION

The American Fire Service has a longstanding history of committed service to protecting its citizens from the threat of fire. Firefighters are thrust into chaotic emergency scenes, sometimes with little information, where they must make difficult decisions and take heroic actions to rescue and protect citizens. These decisions and actions may result in injury or death. The tasks associated with the investigation of decisions and actions at a fire operation that resulted in the death of firefighters and fire officers are a challenging but sacred responsibility, particularly given the imperative to foster meaningful reflection and learning.

One of the perspectives that are historically overlooked in line-of-duty death (LODD) investigations is the human narrative – most notably how member behaviors, perceptions, and decisions influenced actions of consequence on the fireground. All too often, LODD report narratives are influenced by outcome biases which result from the benefit of knowing exactly how a fire operation ended - a luxury that those operating on the fireground did not possess. These biases can unfairly alter and contaminate subsequent narratives regarding fireground risk profiles, strategies, and tactics. Additionally, outcome-centric conclusions can trivialize the situational uncertainty that members were confronted with and marginalize the psychophysiological stressors that influenced human performance on the fireground.

Though enhanced by modern equipment and technology, firefighting remains principally a human endeavor. The comprehensive analysis of complex fire operations, particularly those that result in the death of firefighters and fire officers, demands a nuanced examination of how external and internal stressors not only impaired but also enhanced fireground performance. Human Performance is not traditionally discussed by NIOSH when evaluating contributing factors for LODD. For this reason, an extensive BACKGROUND on the topic is provided to give the reader the tools to better understand the context for the RECOMMENDATIONS that follow.

Data Acquisition- Special Thanks

Battalion Chief 5 (BC5), the Captain of Truck 12 (T12), and one member from Engine 52 (E52) were wearing personally obtained biometric devices for the duration of the incident. The device measures heart rate, physical strain, recovery through sleep and low-impact activities, as well as stress within the body. Having three members who were key participants for this incident wearing this device, the evidence of physical and psychological stress being connected is discernable to the effects of operating under duress.

The BCFD had the unique opportunity on this incident to have voluntarily obtained these key members' biometric data. The members, agreeing to candidly share this information, is a true testament to their desire to see the BCFD move onward and upward from this tragedy. The BCFD owes **SPECIAL THANKS** to Battalion Chief Michael Rudasill, Battalion Chief Kevin Kane, and EMT/FF Anthony DiJenno for providing their personal data which was used to support the FINDINGS and make RECOMMENDATIONS in this section.

BACKGROUND

The Effects of Psychophysiological Stress on the Mind and Body

Physiologists organize the demands of athletic and tactical activity into five zones. Zone 5 represents the most strenuous region in which individuals operate at 90% of their maximum heart rate. Recent efforts to quantify the demands associated with structural firefighting have revealed that members do in fact, attain Zone 5 metrics on the fireground confirming rigorous anaerobic activity. This would be considered a rare feat in most competitive team sports and individual endurance activities. The physical demands involved with fireground tasks are intensified by persistent occupational stressors that include full thermal encapsulation, significant load carriage (PPE, tools), and SCBA use. The physical demands are compounded during fire operations which occur during periods of high ambient heat and humidity.

Though inordinate, the physical demands on the human body on the fireground are exceeded by the emotional forces which impact both physiological and cognitive performance during complex fire operations. Environmental stressors such as operational uncertainty (e.g. undetermined location of the seat of the fire), novelty, time pressure, and resource shortages have a profound impact on both the human mind and body during fireground operations. Emotional stress is exacerbated when the sensory inputs of firefighters and fire officers are constrained due to PPE encapsulation (tactile) and SCBA use (olfactory). More problematic is the fact that visual obscuration resulting from smoke conditions inside an unfamiliar and/or cluttered occupancy deprives the human brain of its most informative and influential sensory input – vision. Though situational awareness is critical to optimal performance and firefighter safety, inherent human limitations are quickly aggravated by environmental and occupational stressors during fireground operations, particularly inside of the fire building.

Human factor scholars and fire service human performance leaders contend that even the most seasoned members are subjected to significant levels of physiological and emotional stress at complex fire operations. The sympathetic nervous system releases several stress hormones including epinephrine (e.g. adrenaline), which stimulates the heart. Increase in hormonal activity also results in an increase in respiratory function, pupil dilation, accelerated heart rate, and the redirection of blood throughout the body (and away from the brain). The Yerkes-Dodson Law suggests that tactical performance is optimized when heightened but regulated levels of physiological arousal are achieved relative to the situation and respective task requirements. Task performance is however, quickly degraded when members are overwhelmed by conditions and/or ill-prepared to perform requisite tasks.

It is important to note that the human body and mind are far more sensitive to the effects of emotional stress than physical stress, particularly in well-conditioned tactical athletes. Members who experience sustained physiological arousal find themselves on the “backside of the curve,” referencing the right-side region of the Yerkes-Dodson Upside Down U-curve, *(Figure 1)* where activation levels exceed human capacity. In these instances, unregulated

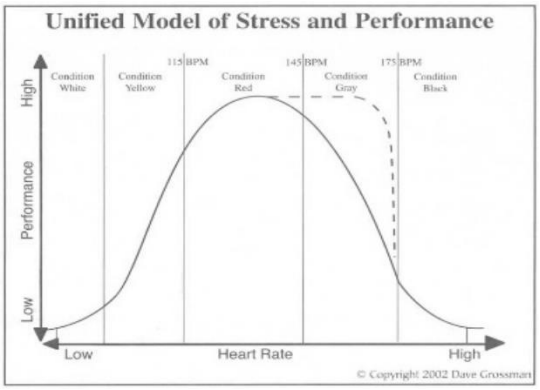


Figure 1: Yerkes Dodson U-Curve correlated with Heart Rate Conditions; On Combat, Grossman & Christensen, 2008

stress is likely to degrade motor skills and inhibit communication inclusive of auditory function.

Psychophysiological arousal results in perceptual distortion which manifest as short term and procedural memory lapses, time distortion and spatial disorientation, further corrupting decision making.

As predicated in the Yerkes-Dodson unified model of stress and performance, maintaining a heart rate of approximately 115 – 145 bpm, dependent on fitness, experience and other subjective factors, will help the member remain properly within the range of operating in what athletes and operators consider the 'flow' zone. This is also referred to as flow state. This is considered the 'sweet spot' for consciously performing with ease and utilizing adrenaline to the member's advantage.

Humanizing the Application of Stress to Uninitiated Members and Units

Uninitiated members and/or those members who have not been properly trained for real-world conditions and contingencies are most susceptible to the effects of physiological overarousal. The effects of this have the potential to breed irrational behavior that jeopardizes safety and survival. Conversely, a moderated and regulated increase in hormonal stress response will favorably impact the performance of experienced and well-trained members on the fireground. For this reason, environmental stressors must be contextualized, as two different members can display dramatically different psychophysiological responses to the same conditions and environmental stimuli. The variation in response to operational stressors can also manifest as a "fight, flight, or freeze" response, a popularized and simplified explanation that further substantiates stress is both a driver of optimal performance and an inhibitor that can have lethal effects.

Company officers in the BCFD are entrusted with great responsibility when leading their units at fire and emergency operations. Equally great is the responsibility to train and prepare members to operate capably under pressure. The act of leading a cohesive unit in which members are aware of each other's respective strengths and weaknesses because of prior training and operational experience is a privilege. The responsibility of leading a unit in which members are unfamiliar and untested becomes a challenge and is further hindered by uncertainty.

Human factors scholars have affirmed that situational uncertainty and novelty are principal sources of psychophysiological stress. Operational uncertainty and novelty are magnified when a company officer is leading in a relatively new role with an unfamiliar firefighter, assigned a critical position as the Pipe firefighter, in an engine company. Furthermore, unit cohesion is compromised when company officers and firefighters possess considerably different mental models created by training and experience. These models are made for fire conditions and appropriate tactics and techniques commonly referred to as "slide decks." The absence of relationships that pre-date the shift places a unit at a considerable competitive disadvantage. Lastly, the harmful effects of chronic fatigue resulting from excessive workload, high call volumes, and staffing shortages cannot be overlooked. Human factors scholars assert that complex tactical operations place inordinate demands on cohesive units which enjoy high-fidelity training, shared operational experience, and intentional rest recovery cycles. The lack of these dynamics place members at an even greater competitive disadvantage in unforgiving, lethal environments.

REFERENCES:

- Grossman, D., & Christensen, L. (2008). *On Combat, The Psychology and Physiology of Deadly Conflict in War and in Peace.* Warrior Science Publications, 3rd Edition.

SUMMARY OF RECOMMENDATIONS

A description of the specific facts relating to Human Performance with recommendations follows. Here is a summary of recommendations for the Human Performance section:

Human Performance #1	Human Performance Training	Establish and implement training for all officers, including the influence of stress on situation awareness, to optimize decision making and practice the role of Incident Command under stressful conditions.
Human Performance # 1	Command Training	Continue FOCAS lab for all Incident Commanders.
Human Performance #2	Command Training	Establish and implement training for all officers, including the influence of stress on situation awareness, to optimize decision making and practice the role of Incident Command under stressful conditions.
Human Performance # 2	Human Performance Training	Establish and implement training for all officers on Human Performance, including the influence of stress on situation awareness, to reduce perceptual distortion
Human Performance #3	Human Performance Training	Establish and implement training for all members on Human Performance, including the influence of stress on situation awareness, to reduce perceptual distortion.
Human Performance #4	Training Under Stress	Establish and implement training for all offices on how to incorporate stress inoculation in Battalion and Unit level training to ensure members respond with the appropriate level of urgency during high stress conditions.

CAUSAL FACTOR: HUMAN PERFORMANCE #1 – COMMAND TRAINING

Summary: The Incident Commander was successful in implementing the BCFD policy for MAYDAY. The BCFD should emulate his training for other Incident Commanders to replicate his success at future incidents.

FACTS

The Incident Commander (IC) completed every required action listed in MOP 602-13: MAYDAY. He was successful despite the highly stressful and uncertain environment. He was decisive and assertive in his command of the incident.

Figure 2: Incident Commander's biometric data for a "typical" fire.

Figure 3: Incident Commander's biometric data for the Linden Heights Incident

The IC has been a Battalion Chief since 2010 and has commanded or assisted on over 900 fires. He provided biometric data for what would be a "typical" fire occurring prior to this incident as Figure 2. This data shows him reaching a maximum heart rate of about 130 beats per minute (bpm). The activity of commanding a typical fire for the IC usually registers as an Active Recovery, staying in Zone 1 or below 60% of his maximum heart rate.

On the Linden Heights Incident, the same IC reached 166 bpm, or Zone 5 (See Figure 3). Despite this higher-than-usual peak, the IC was able to quickly recover, reducing his heart rate below 150 bpm for the remainder of the MAYDAY operation. During this time, while the mental and physical stress of the incident was highest, the IC was able to utilize proper techniques to slow his breathing, re-focus his efforts, and maintain poise to appropriately command within policy during an extremely intense situation.

During times of stress, the body begins to produce free radicals in the form of adrenaline. The adrenaline flows through the body, initiating the 'fight-flight-freeze' response in the autonomic nervous system. This physiological reaction puts the IC at an extreme disadvantage, as they are unable to move and burn this adrenaline the way one would as they operate inside of a structural fire. Without this movement and ability to properly recognize, adapt and overcome this stress, many will suffer perceptual distortions which can harm decision making. As predicated in the Yerkes-Dodson unified model of stress and performance, maintaining a heart rate of approximately 115 – 145 bpm, dependent on fitness, experience and other subjective factors, will help the member remain properly within the range of operating in what athletes and operators consider the 'flow' zone. This is considered the 'sweet spot' for consciously performing with ease and utilizing adrenaline to the member's advantage.

After the incident, the IC reported being restless due to this adrenaline dump, which was resolved in short by performing cardiovascular activities in the days after. Exercising helped the member regain proper sleeping patterns, which is paramount to recovery.

The IC attended the Mental Performance Program with The Fire Department of New York City (FDNY) in April of 2023. This training covers the recognition and identification of the physiological effects of adrenaline and stress. Exposure to this information and the techniques used to combat the effects impacted the IC's response on this incident by helping control as much of an uncontrollable circumstance as possible. Furthermore, this training, which additional members on the incident attended afterwards, assisted with the post-traumatic response that is expected with such a high impact event.

The IC has managed dozens of documented MAYDAY incidents through training in the BCFD's Fire Officer Command and Simulation (FOCAS) Lab. He is a primary FOCAS Lab team member and serves as an evaluator for other ICs. He was trained and mentally equipped to deal with the stresses presented to him and it was obvious in his performance and capability to effectively comply with MAYDAY policies.

The Fire Academy offers a course called HEAT - Higher Education & Advanced Tactics, which started in March 2024. A second week of the HEAT course is OHPUS- Optimizing Human Performance Under Stress. Originally held with HEAT, OHPUS is now offered as a separate class. This course is grant

funded and directed towards Fire Officers. According to the course bulletin, this course provides "a comprehensive understanding of human performance in an operational context and devotes considerable attention to the mental, emotional, and physical aspects of performance with science, applied research, and best practices" (BCFD Bulletin dated April 26, 2024).

The IC is a strong advocate for Human Performance training in the BCFD. He has facilitated the OHPUS course since inception. He has also administered Resilience training as part of the BCFD's EMS Recertification- Continuing Education program.

RECOMMENDATIONS

1. Establish and implement training for all officers, including the influence of stress on situation awareness, to optimize decision making and practice the role of Incident Command under stressful conditions. The optional HEAT & OHPUS classes currently offered by the Fire Academy satisfy these objectives and should be considered as mandatory courses to be taken upon promotion to the rank of Lieutenant.
2. Continue FOCAS lab for all Incident Commanders.

PREVIOUS REPORT(S):

Stricker Street p.151

REFERENCES:

- BCFD Bulletin dated April 26, 2024: Training Opportunity- H.E.A.T. Class

CAUSAL FACTOR: HUMAN PERFORMANCE #2 – HUMAN PERFORMANCE TRAINING

Summary: The Captain of Truck 12 displayed proficiency and bravery. The BCFD should emulate his training for other Company Officers to replicate performance at future incidents.

FINDINGS

Truck 12 was not on the initial alarm, but the officer and unit Captain, requested to be added after clearing another incident. Upon arrival, the Captain ran to the Alpha side of 5210 Linden Heights Avenue and had a face-to-face meeting with the Incident Commander, requesting to assist with the MAYDAY efforts. Once granted, Truck 12's OIC proceeded to the front porch, contacted EMT/FF Pitts and removed the security bars off the front window. He used his tool to sweep the inside of the window area and entered the dwelling via the bay window to make a quick sweep for EMT/FF Pitts. Truck 12's OIC re-entered the dwelling through the front door and located EMT/FF Pitts almost immediately and began downed firefighter removal. Truck 12's OIC would later describe the heat as 'paralyzing.'

Truck 12's OIC was able to remove EMT/FF Pitts with the help of Engine 52's officer. After transferring care, he reentered the dwelling with a handline with the assistance from the officer of Truck 16. Both believed that there were still members trapped inside. The officer from Truck 12 attempted to use his thermal imaging camera at this point. They backed out shortly thereafter due to high heat and continued to flow water from the porch. During this entire experience, he was still able to clearly communicate his location, conditions, actions and needs with the IC.

The Captain of Truck 12 was directly involved in the rescue and removal of EMT/FF Pitts. The Captain's heartrate peaked at 193 bpm, which according to many charts would prove catastrophic to the member. This member was able to perform at extremely high levels within 'Zone 5' (90-100% Maximum Heartrate) for 27 minutes, making multiple, clear radio transmissions (*Figure 5).* This fire was far from "typical" for the Captain, as shown by his data in Figure 4. The adrenaline, physicality and experience of this member were tremendous factors in this incident. The member performed optimally both physically and mentally, while compartmentalizing the emotional strife that must be considered during the rescue of a fellow firefighter.

Figure 4: Captain of Truck 12's biometric data for a "typical" fire.

Conversely to the IC, the Captain upon returning home was able to sleep for an extended period and recovery levels, according to the biometric device, were very high. This is due to the same adrenaline dump as the Incident Commander. The Captain was able to physically use the adrenaline; therein, the body immediately entered the recovery mode which allowed him to begin the physical healing process faster.

Figure 5: Captain of Truck 12's biometric data for the Linden Heights Incident.

The Captain frequently practices efficiently operating as a Truck Company Officer through the Department's Truck Training Program, which he regularly assisted in instructing prior to this incident. Being an adjunct instructor at the Fire Academy primarily involved in the Advanced Firefighter Removal (AFR) school and truck school, the Captain was well versed in the operational adversity that may be faced in these situations as well as the practices to overcome them. The truck training, specifically, has taught practices on the removal of window bars and forcible entry that were utilized during this incident. The experience of the captain coupled with the frequency of practice as an instructor of these two courses, respectively played a pivotal role in the successful actions taken.

The Fire Academy AFR course- Advanced Firefighter Removal- uses case studies to re-create LODDs. It allows members to physically and mentally work through the problem-solving associated with firefighter rescue in a high-stress training environment. The BCFD has conducted this course 9 times since May 2023, having trained 180 members so far. This course is grant funded, and funds are available to deliver 5 additional classes to 100 students. It is optional and offered on overtime while members are off duty. Members who are scheduled to work during class dates are detailed off of their shift.

The Captain was the only member directly involved in the MAYDAY that had taken this specific class prior to the incident.

The Fire Academy offers a course called HEAT - Higher Education & Advanced Tactics, which started in March 2024. This class was originally only offered to Fire Officers but has expanded to firefighters and is now part of recruit training during BCFD Skills in 2024. The course covers Fire Dynamics, Building Construction, and Thermal Imaging Camera Training. The Fire Academy has trained 214 members as of October 2025. The course is grant funded, and there are funds available to continue at least 4 more classes. It is optional and members are compensated with overtime while off-duty but members who are scheduled to work during class dates may be detailed from their shift.

A second week of the HEAT course is OHPUS- Optimizing Human Performance Under Stress. Originally held with HEAT, OHPUS is now offered as a separate class. This course is also grant funded and directed towards Fire Officers. It focuses on how the member responds to stress mentally, emotionally, and physically. It also offers opportunities to practice managing stress using the tools learned in a controlled training environment.

RECOMMENDATIONS:

1. Establish and implement training for all officers, including the influence of stress on situational awareness, to optimize decision making and practice the role of Incident Command under stressful conditions. • The optional HEAT & OHPUS courses currently offered by the Fire Academy satisfy these objectives and should be considered as mandatory courses to be taken upon promotion to the rank of Lieutenant.
2. Establish and implement training for all Officers on Human Performance, including the influence of stress on situational awareness, to reduce perceptual distortion. • The optional AFR course currently offered by the Fire Academy satisfies this recommendation. This course includes Human Performance and allows members to practice skills in a high stress training environment, offering them an awareness of their personal response to MAYDAY situations.

CAUSAL FACTOR: HUMAN PERFORMANCE #3 – HUMAN PERFORMANCE TRAINING

Summary: Establish and implement training for all members on Human Performance, including the influence of stress on situation awareness, to reduce perceptual distortion.

FINDINGS

Members experienced perceptual distortion on this incident. Interviews with members involved in the incident found that their recollection of fire conditions did not match video evidence. Members on the porch were adamant that they never saw any fire, but evidence shows fire coming out of the front window for a period of nineteen (19) seconds with members nearby. A photo of the amount of fire is shown in *Figure 6* below.

Figure 6: Fire showing from porch just after front window self-ventilates at 1550 hours.

Members also experienced auditory exclusion. Every member interviewed stated they never heard any PASS device sounding until later in the incident. This was from an SCBA being left on the front porch after the removal of a member. It was proven by video evidence that PASS devices were sounding upon the members' removal.

Auditory exclusion was also evident from radio communications. Members were questioned about their recollection of Captain Rinaldo's MAYDAY transmission, which in totality, 80.6% of the members interviewed stated hearing the transmission. Only two thirds of that percentage (67%) of the interviewed members heard the MAYDAY correctly, with approximately 12% having heard the MAYDAY, but recalled the content incorrectly or did not have context. Lastly, 19.4% of the members admitted to not hearing the MAYDAY at all, due in part to auditory exclusion.

Figure 7: Member from E52 RIT Biometric data for a "typical" fire

Figure 8: Member from E52 RIT Biometric data for the Linden Heights Incident

A third member wearing a biometric device was assigned to the Rapid Intervention Team (RIT). This member experienced similar stress mentioned previously by the other members wearing biometric devices. His data showed him in Zone 5 heart rate for upwards of 12 minutes and Zone 4 for 47 minutes (*see Figure 8*). The difference between this fire and a "typical" fire for the RIT team member was not as significant as found with the other two members. In fact, the member spent more time in Zone 5 on a "typical" fire then on this incident (*see Figure 7*). This is likely due to the RIT Member achieving flow state during the mental receipt of the MAYDAY. Flow state is described as the optimal performance during an experience where a human is fully immersed on completing a single activity or task. During a "typical" fire, there are many tasks that each individual needs to accomplish simultaneously. During a MAYDAY, all focus moves towards the common goal of removing the downed firefighter under any-and-all circumstances.

For one to achieve a positive experience with flow state, they must be intimately involved and trained in the task they are attempting to achieve. For the RIT Member, he was both mentally and physically prepared for how he would respond to a MAYDAY. He has trained physically for the scenario during downed firefighter drills and performed countless mental repetitions of how the scenario would play out. When the situation occurred, he solely reacted on his training and preparedness, directing his focus on removing the downed firefighter(s).

Upon hearing the MAYDAY, the member admits to experiencing perceptual and auditory distortion. He recalls hearing the location of the MAYDAY to be on the second floor. There were several members who stated in interviews that they made the same assumption. When the communications audio was played in a quiet environment, it was easy to hear Captain Rinaldo state, "MAYDAY, MAYDAY,

MAYDAY- first floor." The auditory distortion experienced by many members was likely due to the stress of realizing that a MAYDAY was transmitted, while attempting to hear the radio over fireground interference. Members quickly realized that due to the fire conditions on the 2nd floor, this was not the area of rescue, and they made the necessary adjustments.

It is important to note that the member, engaged in the rescue effort as soon as the MAYDAY was announced, was able to compartmentalize the incident. Many members on the scene had a close friendship with Captain Rinaldo and EMT/FF Pitts and they were still able to execute the task at hand. This member, like many others, went back to firefighting operations after the members were transported and the MAYDAY was mitigated. The ability to continue fireground operations may have served as an opportunity to relieve stress through physical activity. For others, it may have been dangerous as this would have increased the likelihood of members operating outside of their typical fireground stress parameters. This is why it is so important for members to have an awareness of Human Performance, so that they can understand how they respond to stress and where their personal parameters are.

The Fire Academy AFR course- Advanced Firefighter Removal- uses case studies to re-create LODDs. It allows members to physically and mentally work through the problem-solving associated with firefighter rescue in a high-stress training environment. The BCFD has conducted this course 9 times since May 2023, having trained 180 members so far. This course is grant funded, and funds are available to deliver 5 additional classes to 100 students. It is optional and offered on overtime while members are off duty. Members who are scheduled to work during class dates are detailed off of their shift.

One member, directly involved in the MAYDAY had taken this class prior to the incident. Three additional members have completed this course since the incident.

RECOMMENDATION:

Establish and implement training for all members on Human Performance, including the influence of stress on situation awareness, to reduce perceptual distortion.

1. The optional AFR course currently offered by the Fire Academy satisfies this recommendation. This course includes Human Performance and allows members to practice skills in a high stress training environment, offering them an awareness of their personal response to MAYDAY situations.

CAUSAL FACTOR: HUMAN PERFORMANCE #4 – TRAINING UNDER STRESS

Summary: Establish and implement training for all officers on how to incorporate stress inoculation in Battalion and Unit - level training to ensure members respond with the appropriate level of urgency during high stress conditions.

FINDINGS

Not all members arriving on the fireground took an aggressive posture towards the incident at hand. This was indicated by video evidence of a lack of urgency from some of the responders on scene who arrived as the MAYDAY was being transmitted and as the rescue operation unfolded. Members reported insufficient training oversight and being inundated with redundant tasks as the reasons for this passive attitude. Complacency in the fire service may be caused by anything from 'burnout' to simply lack of exposure to stressful incidents. The physiological response to stress can be positively impacted through stress exposure in training.

MOP 110-3 mandates all officers to fulfill educational requirements to be eligible for promotion. The idea behind these certifications is to ensure the members have the training on how to lead, manage, instruct and develop other members of the fire service so they can appropriately respond to the challenges faced by firefighters. The shortcomings to these management courses are that they are primarily administrative, and the only operational practice and evaluation is given in a classroom setting using computer simulations. These simulations are highly valuable for repetition, but it is not enough for the unit officer who faces both mental and physical challenges in the operational environment.

Adopting a 'crawl-walk-run' methodology of training throughout the Department will help members build foundation on the important, basic skills of leadership, instruction and performance alike while developing our leaders. Incident simulations would serve as the "crawl" portion of officer development. This is especially important for officers that promoted before the implementation of MOP 110-3 and who have never participated in simulations.

Performing at a healthy tempo during training will increase the effectiveness and highlight the variables needing improvement throughout the field members, which will increase the efficiency of the Fire Department in its entirety. Including stress inoculation in training can help build a mental 'slide-deck' for which members to recall the information in real-life circumstances. Training under physical stress will help transition from the mental stress of simulations.

The success of this process was apparent in the rescue operation, as several of the rescuers and the Incident Commander had undergone rigorous training in this endeavor prior to the incident. This training includes one member taking Advanced Firefighter Removal, MFRI's Safety and Survival class offered by the Fire Academy, Leadership Under Fire's Mental Performance Initiative, and Fire Academy's Truck Class. At least six members involved directly in the rescue operation had taken at least one of these classes.

RECOMMENDATION:

1. Establish and implement training for all officers in the following, specific order:
    - Previously recommended Human Performance Training – see Finding – *Human Performance #2 and #3.*
    - Company Officer version of FOCAS/Simulation Lab to practice mental stress of simulations.
    - Incorporating stress inoculation in Battalion and Unit level training to ensure members respond with appropriate physical level of urgency during high stress conditions.

CAUSAL FACTOR: STAFFING

INTRODUCTION

During the Linden Heights investigation, personnel-related factors were reviewed, including training requirements for positions and staffing levels for apparatus. This data is grouped under the staffing section. The recommendations focus on improving the BCFD's operational efficiency by assessing response coverage, staffing levels, and compliance with national standards to strengthen response capabilities and effectiveness.

SUMMARY OF RECOMMENDATIONS

A description of the specific facts relating to Staffing with recommendations follows. Here is a summary of recommendations for the Staffing section:

ITEM	SUMMARY	DESCRIPTION
Staffing #1	Acting Out of Title	Update Acting Out of Title for Pump Operator, Emergency Vehicle Driver, Lieutenant and Battalion Chief to include mandatory classes and annual skills competencies.
Staffing #1	Acting Out of Title	If an update to the Acting process is not feasible, consider elimination of the process.
Staffing #2	Increase Minimum Staffing	The BCFD to increase its minimum staffing on all engine, truck and rescue companies to a minimum of five (5) personnel per apparatus, per shift. The additional personnel should be used to allow the officer to maintain a supervisory role of the unit.
Staffing #3	Increase EMS Units & Safety Officers	The BCFD should increase its complement of EMS transport units and Incident Safety Officers to satisfy NFPA 1710 recommendations.
Staffing #3	Increase Suppression Units	The BCFD should evaluate and consider increasing the number of Engines and Trucks to ensure adequate critical response coverage to the City of Baltimore.
Staffing #4	Safety Officer	MOP 106-3 was amended to include the addition of Safety Officer 4 and clear procedures for their response. It also describes the procedure for when no Safety Officer is available.
Staffing #4	Safety Officer	Relocate or increase the Safety Officer units to ensure NFPA 1710 compliance for response time within 480 seconds of dispatch to ensure adequate coverage.
Staffing #5	Heavy Rescue Response	The Fire Department strategically add a second Heavy Rescue with a minimum of five (5) personnel per shift.
Staffing #5	Staffing Funding	The Fire Department researches and the utilizes the Federal Government's Assistance to Firefighters Grants (AFG) for Staffing for Adequate Fire and Emergency Response (SAFER) program for initial funding opportunities.
Staffing #6	Instructor Qualifications	Add skills evaluations in conjunction with interviews for instructor promotion evaluation to ensure candidates are adequately qualified.
Staffing #6	Instructor Qualifications	Implement annual skills evaluations for each discipline that is taught by the instructor to maintain their teaching status.

Staffing #6	Instructor Qualifications	Require annual tactics, techniques and procedures training for all instructors, both field and promoted, to ensure best practices are taught with continuity of the message.
Staffing #6	Instructor Roles and Responsibilities	Incorporate detailed position descriptions for Fire Academy staff into the Rules and Regulations, clearly defining the responsibilities of each role.
Staffing #6	Instructor Credibility	Ensure instructor credibility and accountability by incorporating field members in all levels of training and adding a frequent, consistent field component to the instructor position.
Staffing #7	FCB Liaison	Permanently staff the FCB Liaison position to ensure efficient operations by improving Communications.

CAUSAL FACTOR: STAFFING #1 – ACTING OUT OF TITLE

Summary: Members that were operating in acting capacities did not perform at the highest level of proficiency for their positions. The BCFD should modify acting programs to ensure that they align with the position. If not, elimination of the program should be considered.

FACTS:

The basic knowledge, understanding, and practical aptitude of hydraulics, fluid dynamics, pump theory, apparatus positioning and placement, and basic job-related functions of pumping fire apparatus or operating aerial apparatus is severely lacking throughout the Fire Department's skill set. This deficiency is strongly supported by the one-on-one interviews taken post incident with the Pump Operators and Emergency Vehicle Drivers, both promoted and acting-out-of-title, that responded and operated on the scene.

Engine 20's acting-out-of-title Pump Operator (PO) positioned the apparatus twice and on both occasions, blocked all incoming apparatus from accessing the 5200 block of Linden Heights Avenue, to include the 1st assigned truck company. Additionally, multiple tenured promoted POs as well as acting-out-of-title POs stated that they were unsure in their understanding of simple fire ground hydraulics. This included the differences between gallons per minute (GPM) needed for the different nozzles and tips the department provides, how friction loss in hose is calculated to produce the correct fire flow at the nozzle, and the total pump discharge pressure needed to operate specific nozzles in pounds per square inch (psi) to achieve the appropriate GPM rating for those nozzles.

The current departmental requirements for the acting-out-of-title approval for both PO and Emergency Vehicle Driver (EVD) with regards to education and training of those positions is currently satisfied only through the completion of the acting-out-of-title manual (PO or EVD) which is generally completed by the 18-month mark in a member's career. Upon manual completion, members are assessed uniformly on benchmarks for the respective position by a Fire Academy staff member as outlined in MOP 342-3.

Members operating in the Acting Lieutenant position were similarly deficient. While they physically operated efficiently, they were unaware of basic, key RIT functions in BCFD MOP 602-8, including softening the building, as evidenced in interviews. The ability for officers to recall this policy is important for accurate decision making and proper incident prioritization.

MOP 110-3 ensures candidates for each officer rank, from Lieutenant to Battalion Chief, have the courses that meet minimum standards according to NFPA Standard 1021. After meeting the minimum qualifications, members are tested and ranked based on a written exam, oral exam and seniority. The BCFD does not impose these standards or testing on Acting Lieutenants. Members can become Acting Lieutenants after 3 years in the department and completion of an acting manual. The verification of completion is done by the member's officer, with final approval by the respective Battalion Chief. There is no final, uniform skills assessment for Acting Lieutenant as there is for EVD and PO.

Another concern with acting positions of all ranks is frequency. The skills required in each position are perishable and without practice, they can be lost. An initial successful evaluation does not ensure future success as time transpires, and skills go without practice.

RECOMMENDATION(S):

1. Modify the Acting Out of Title program to ensure it follows the same developmental pathway, MOP and standards for each position – PO, EVD, Lieutenant and Battalion Chief. This report recommends improving these pathways for members that have promoted into these positions in the FINDINGS: TRAINING Section. This would mean ensuring members approved to an acting capacity are MOP 110-03 compliant (for Lieutenant and Battalion Chief) and have completed all the same classes and evaluations. Upon approval, members should also receive an annual evaluation to ensure they maintain skills competency.
2. Alternatively, if the burden to ensure acting members are equally trained is too great, consider eliminating the acting process. Instead, members that are on the current list for promotion would be best suited to serve in acting roles, as they have already met the qualifications and been successfully tested.

PREVIOUS REPORT(S):

- North Avenue – B5
- East Avenue #10

REFERENCES:

- BCFD MOP 342-3: Emergency Vehicle Driver & Pump Operator- ACTING APPROVAL
- BCFD MOP 602-8: RAPID INTERVENTION TEAM (RIT) (TWO-IN, TWO-OUT)
- NFPA 1021: Standard for Fire Officer Professional Qualifications, 2020 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards

CAUSAL FACTOR: STAFFING #2 – INCREASE MINIMUM STAFFING

Summary: The BCFD should increase its minimum staffing levels for each fire suppression company from the current four (4) personnel to five (5) personnel to comply with the NFPA 1710 recommendation for a densely populated, urban fire department.

FACTS:

The current BCFD staffing model for its suppression companies of four (4) members is not adequate for a densely populated city per the guidelines set in NFPA 1710. Baltimore City has a land area of 80.9 square miles with a population as of the 2020 census calculated at 585,708 people. The population density of Baltimore City is 7,235.43 people per square mile. NFPA 1710, 2020 Edition, Section 1.1 provides a standard for minimum requirements relating to the organization and deployment of fire suppression operations, medical operations, and special operations provided to the public by a career department. NFPA 1710 Section 3.3.18 defines dense urban areas as population greater than 200,000 people with a population density of greater than 3,000 people per square mile. Moreover, NFPA 5.2.3.1.2 describes first due response zones with high number of incidents, geographical restrictions, geographical isolation, or urban areas, shall be staffed with a minimum of five (5) on-duty members.

There were four members riding Engine 29, each with a distinct assignment: Officer, Pump Operator, Pipe, and Lead-Off. The Fire Department currently operates with the officer of all suppression companies as a working member of the unit during incident response. During non-emergency conditions, the main role of the company officer is that of supervision. The structure of the BCFD's staffing model and MOPs require officers to manage the other members while simultaneously having to perform necessary company related tasks in preparation for an interior firefight.

Engine 29's Pipe position, EMT/FF Pitts, was a new member of the department who had just recently graduated from the Fire Academy. This was his first fire of significance while assigned the pipe position. The Lead-Off member of the unit was operating at the hydrant, establishing the water supply. The Pump Operator was with the apparatus, ensuring the attack line was adequately pumped. Captain Rinaldo, having to work as a member of the crew and the supervisor, was pulling the hand line and correcting kinks prior to joining EMT/FF Pitts in the building. These additional tasks shortened the time Captain Rinaldo had to make calculated decisions of the interior fire conditions before it propagated to a hostile fire environment inside the dwelling.

NFPA 1710 standards cannot be the only measure considered with the increase in staffing. Additional support of this recommendation must factor in the human element as well. Research of the human brain has validated that humans can only handle two tasks at a time due to the way the brain is divided. It was further concluded that humans do not have the ability or capability to do more than one task that involves decision making. In general, these studies have disclosed that people show severe interference when even very simple tasks are performed at the same time, if both tasks require selecting and producing action (e.g., (Gladstones, Regan & Lee 1989), (Pashler 1994)). Another study by René Marois, a psychologist of Vanderbilt University, discovered that the brain exhibits a "response selection

bottleneck" when asked to perform several tasks at once. The brain must then decide which activity is most important, thereby taking more time in the decision-making process.

The ability for Captain Rinaldo to make calculated decisions on the fire environment's changing conditions while engaging in the early moments of the firefight on Linden Heights was delayed and inhibited by the fact that he had to perform several physical tasks and make several critical tactical decisions at the same time. This incident was not a result of inexperience from Captain Rinaldo, it was a result of human nature and how the brain's physiology is programmed.

RECOMMENDATION(S):

1. The BCFD to increase its minimum staffing on all engine, truck and rescue companies to a minimum of five (5) personnel per apparatus, per shift. The additional personnel should be used to allow the officer to maintain a supervisory role of the unit.

PREVIOUS REPORT(S):

- Stricker Street, 2022 – p.143
- Liberty Heights #11
- East Avenue #4
- BCFD FACETS Report, 2021 – pp. 93-94

REFERENCES:

- U. S. Census Bureau (2020). *Quick Facts- Baltimore City, Maryland.* Retrieved from www.census.gov/quickfacts/fact/table/baltimorecitymaryland
- NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments 2020 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- Gladstones, W. H., Regan, M. A., & Lee, R. B. (1989). Division of attention: The single-channel hypothesis revisited. *The Quarterly Journal of Experimental Psychology A: Human Experimental Psychology, 41*(1-A), 1–17. https://doi.org/10.1080/14640748908402350
- Pashler, H. (1994). Dual-task interference in simple tasks: Data and theory. Psychological Bulletin, 116(2), 220–244. https://doi.org/10.1037/0033-2909.116.2.220
- Han, S. W., & Marois, R. (2013). The source of dual-task limitations: Serial or parallel processing of multiple response selections? *Attention, Perception, & Psychophysics, 75*(7), 1395–1405. https://doi.org/10.3758/s13414-013-0513-2

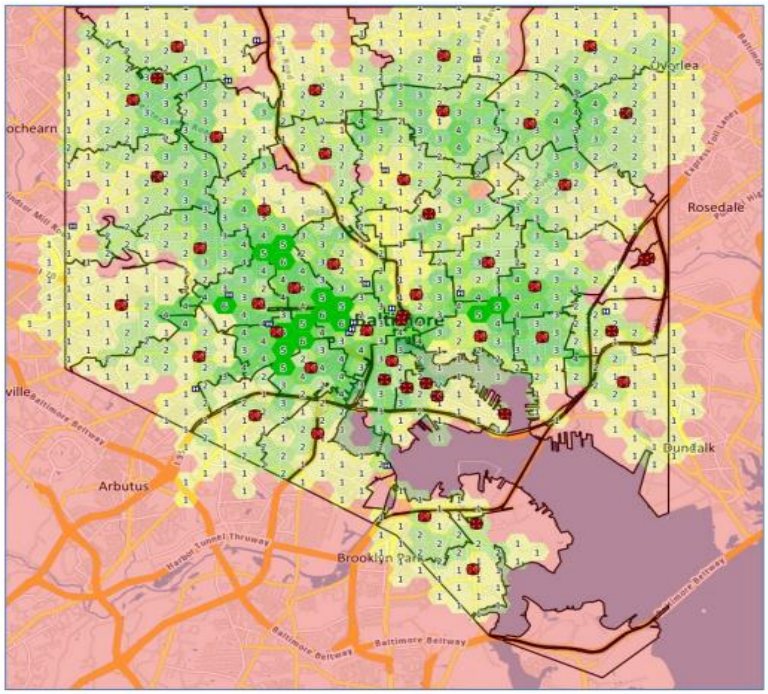
CAUSAL FACTOR: STAFFING #3 – INCREASE EMS UNITS AND SAFETY OFFICERS

Summary: The BCFD should increase its complement of EMS transport units and Incident Safety Officers. They should also evaluate the number of Engines and Trucks to ensure adequate critical response coverage to the City of Baltimore.

FACTS:

The current BCFD apparatus complement is 6 suppression Battalion Chiefs, 1 EMS Battalion Chief, 32 Engines, 3 Squads (Rescue Engines), 17 Ladder Trucks, 1 Heavy Rescue, 2 Safety Officers (SO), 1 Fireboat, 1 Fire Rescue Boat, 6 EMS District Officers, 17 Medic Units (ALS), 12 Ambulances (BLS) and various support units. NFPA 1710, 2020 Edition, Chapter 4 provides a standard for response time on fire incidents as 80 seconds for turnout time for all units, then 240 seconds for arrival of the first engine, 360 seconds for arrival of the second company, and 480 seconds for arrival of the initial first assignment. NFPA 1710 defines a 480 second arrival time with 60 second turnout time for ALS units on EMS incidents.

The FACETS Report evaluated the BCFD for NFPA 1710 compliance. Pictured below is the number of engines that will arrive in 480 seconds, with deeper green indicating more engines meeting that time frame (see *Staffing Figure 1: FACETS Map*). The red indicates NFPA 1710 non-compliance, even when every unit in the BCFD is available for response.



(Red indicates No Coverage, Other Colors and Numbers indicate Depth of Coverage calculated at 4 minutes of Drive Time for Engine and Squad Units)

Staffing: Figure 1: FACETS Map

The BCFD was within NFPA 1710 recommendations for this incident except for the Safety Officer and the ALS unit. Engine 29 arrived 193 seconds after dispatch. Squad 40 arrived 208 seconds after dispatch. The entire first alarm arrived 465 seconds after dispatch except for Safety Officer 4 (SO4) and Medic 11. SO4 took 1190 seconds to arrive after dispatch. Medic 11 took 757 seconds to arrive after they were dispatched. Medic 11's true response time was longer, since there was no EMS unit on the initial dispatch. Medic 11 was a separate dispatch that occurred 75 seconds after the initial alarm. That means the time that transpired from the initial alarm to the first ALS unit arriving was 832 seconds in total.

NFPA 1710 is one of many tools that guide fire departments in their decision-making process for apparatus complement and distribution. In *The MAYDAY Project,* a comprehensive study which evaluated 293 MAYDAY incidents across 264 incidents collected between 2014 and 2015, "more than 90 percent of the time, the MAYDAY occurred to one of the first three companies to arrive on scene" (Abbott, 2016). This means that the most important MAYDAY response statistic is how quickly the remaining units arrive relative to the first, not overall. A gap of 4 minutes between the first arriving engine and the remaining units is sufficient per NFPA 1710, but it was insufficient for the MAYDAY operation.

NFPA 1710 was first drafted in 2001 after 10 years of research. The time standards identified have not changed since the initial release. This means that the data we are making our decisions on is over 34 years old. This is a dangerous assumption when it comes to fires. When comparing fires from 50 years ago to fires today, modern fires advance 8 times faster and produce 200 times more smoke than legacy fires (CTIF, 2019). NFPA response times have not been updated to account for the extreme pace of modern fires.

Response arrival times are captured when the officer depresses "at scene" on the Mobile Data Terminal. This time is not an indication that the members of the unit are ready to complete tasks. Just comparing the Truck Company response on this incident alone, the time that transpired from when the officer depressed the "at scene" button, to when the individual arrived at the front of the building, confirmed by video footage, ranged from under 2 minutes to over 4 minutes and 30 seconds. This 2 minute and 30 second variance occurred despite all three truck companies arriving at the same time. This variance was partly created by poor apparatus accessibility, which all three trucks experienced. Other tasks that affect this variance are the donning of turnout gear and gathering of equipment and ladders. Ultimately, the at-scene arrival time is not a good indicator of the ability for suppression companies to begin to engage in the firefight.

RECOMMENDATION(S):

1. The BCFD should increase its complement of EMS transport units and Incident Safety Officers to satisfy NFPA 1710 recommendations.
2. The BCFD should evaluate and consider increasing the number Engines and Trucks to ensure adequate critical response coverage to the City of Baltimore.

PREVIOUS REPORT(S):

- Stricker Street, 2022 – p.143

REFERENCES:

- NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments 2020 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- Abbott, D. (2016, February 1) The MAYDAY Project. *Firehouse.* https://www.firehouse.com/safety-health/article/12156553/the-mayday-project
- International Association of Fire and Rescue Services. (2019, February 26) 200 times more smoke and 8 times faster burning rate than 50 years ago. *CTIF.* https://ctif.org/news/200-times-more-smoke-and-8-times-faster-burning-rate-50-years-ago

CAUSAL FACTOR: STAFFING #4 – SAFETY OFFICER

Summary: MOP 106-3: SAFETY OFFICER-DUTIES should be updated to reflect the addition of Safety Officer 4 and the addition of a Safety Officer on the initial alarm. The geographical concerns coupled with response times and MAYDAY data would support the need for either relocation or additional safety officer(s).

FACTS:

The addition of Safety Officer 4 was outlined in Operations Memo No. 15-22, Subject: Safety Officer 4; dated December 16, 2022. This Memo also increased the response of the Safety Officer to include all Initial Box Alarms.

Safety Officer 4 (SO4) was the Safety Officer dispatched to the incident. Safety Officer 4 is the unit currently dispatched to the areas in and around the incident location, though initially the CAD at Fire Communications suggested SO2 in the response profile.

Safety Officer 4 (SO4) was the shift safety officer dispatched to the incident on Linden Heights Avenue. SO4 is quartered at the Steadman Fire Station in downtown Baltimore at 15 S. Eutaw Street. SO4 is one of two shift safety officers in the BCFD who respond to all box alarms on the initial assignment. SO4 was placed in service on December 19, 2022, as a recommendation stemming from the fatal fire at 205 S. Stricker St. which occurred on January 24, 2022, that claimed the lives of three (3) BCFD members.

Safety Officer 2 (SO2) is the other shift safety officer that responds to all box alarm assignments. SO2 is quartered at 1100 Hillen St. at the Oldtown Fire Station in East Baltimore.

SO2 is approximately 7.3 miles from its respective station to the incident address of 5210 Linden Heights Avenue. The primary route of travel is north bound on Interstate 83. This is a direct route north of their station encompassing much of the mileage. The secondary route of travel is 6.2 miles. However numerous traffic signals exist on that route.

SO4, who responded to the incident, is 9.2 miles utilizing the same primary route as SO2. The increase in mileage is due to the backtracking SO4 must do to reach Interstate 83. The secondary route for SO4, much like SO2, has numerous traffic signals but is 5.7 miles in distance as opposed to SO2's 6.2 miles.

Time of day was a factor for this incident. Interstate 83 had a high volume of traffic, consistent with an interstate, just prior to 1600 hours when the incident occurred. The late afternoon traffic rush from downtown Baltimore utilizes I-83 to access the Baltimore Beltway, I-695. Despite the multiple lanes of roadway, SO2 was still likely to encounter at least moderate traffic at that time of day. Conversely, SO4 may have encountered less traffic utilizing their secondary route. The presence of traffic signals at nearly every block would dramatically slow their response.

SO4 was dispatched at 15:41:08, went enroute at 15:43:56 and arrived at 16:00:58 hours at the incident location. This was 1190 seconds, over twice the acceptable response time per NFPA 1710.

The square mileage of Baltimore City is 80.9 land miles (11.1 miles of water excluded). This divides the response area for the Safety Officer's into 40.45 square miles each. This means there is a large portion of both safety officers' response areas where NFPA 1710 compliance for response time within 480 seconds of dispatch would not be met.

Both SO2 and SO4 ultimately responded to this incident. If another incident had occurred during that timeframe, there would be no policy direction for a Safety Officer. In May 2025 the BCFD updated MOP 106-3 to provide roles and responsibilities for both Safety Officers. The updated MOP also provided direction for using the second Battalion Chief on a response to fill the Safety Officer role if no Safety Officer is available.

RECOMMENDATION(S):

1. MOP 106-3 has been updated to include the addition of Safety Officer 4 and clear procedures for their response. It also identifies the procedure for using the second Battalion Chief to fill the role of Safety Officer when one is not available.
2. Relocated or increase the Safety Officer units to ensure NFPA 1710 compliance for response time within 480 seconds of dispatch to ensure adequate coverage.

PREVIOUS REPORT(S):

- Calverton Road – p.73
- Stricker Street, 2022 – p.126
- Macon Street #6

REFERENCES:

- BCFD MOP 106-3: SAFETY OFFICER-DUTIES
- BCFD Operations Memo 15-22, Dated December 16, 2022: Safety Officer 4
- NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments 2020 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards

CAUSAL FACTOR: STAFFING #5 – HEAVY RESCUE RESPONSE

Summary: The BCFD should place an additional Heavy Rescue in service to provide adequate coverage of suppression and special operational responses to the City of Baltimore. The minimum staffing of this additional resource shall be staffed with five (5) personnel to comply with the NFPA 1710 recommendation for a densely populated, urban fire department.

FACTS:

The current BCFD staffing model of one (1) Heavy Rescue providing response coverage for the entire city is not adequate for a densely populated city per the guidelines set in NFPA 1710. Baltimore City has a land area of 80.9 square mileage with the population as of the last census conducted in 2020 calculated at 585,708 people. The population density of Baltimore City is 7,235.43 people per square mile. NFPA 1710, 2020 Edition, Section 1.1 provides a standard for minimum requirements relating to the organization and deployment of fire suppression operations, medical operations, and special operations provided to the public by a career department. NFPA 1710, 2020 Edition, Section 5.4 further states Special Operations Response shall be organized to ensure that the fire department's special operations capability includes members, equipment, and resources to deploy the initial arriving company and additional alarm assignments providing such services. NFPA 1710 Section 3.3.18 defines dense urban areas as population greater than 200,000 people with a population density of greater than 3,000 people per square mile. Moreover, NFPA 5.2.3.1.2 mandates that first due response zones with high number of incidents, geographical restrictions, geographical isolation, or urban areas, shall be staffed with a minimum of five (5) on-duty members.

Rescue Company 1, at the time of initial dispatch of 15:41:08, was currently out of service due to trench rescue training and was in the process of decontamination. At the time of the initial MAYDAY transmission at 15:49:18, MOP 602-8: Rapid Intervention Team (RIT) (Two-In Two-Out) states that upon transmission and confirmation of a MAYDAY with RIT activation, Fire Communications Bureau will dispatch a Rapid Intervention Task Force to supplement resources on scene to include Rescue Company 1 and if Rescue Company 1 is unavailable, the closest Squad will be dispatched in their place. Squad 40 was dispatched 2nd due as an engine on the initial alarm and would not have satisfied MOP 602-8. This MOP was not followed, as no other Special Operations Command unit was dispatched. It was not until 15:52:45 that Rescue Company 1 became available for the incident and later arrived on scene at 16:06:27. The MAYDAY was cleared at 15:57:15, 9 minutes and 12 seconds prior to Rescue Company 1's arrival.

The Rapid Intervention Team (RIT) study conducted by the Phoenix, Arizona Fire Department concluded that it takes 12 firefighters to rescue and remove a single downed firefighter from a considerable distance inside of a structure. It took 10 firefighters on Linden Heights to remove two (2) members that were between 3 and 5 feet inside of the dwelling's front door.

Had MOP 602-8: Rapid Intervention Team (RIT) (Two-In Two-Out) been followed, the next closest Squads would have been Squad 26, which Google Maps calculated as 10.4 miles away from the incident then Squad 54, calculated at 9.0 miles away. Even using emergency response procedures, it was impossible for these units to arrive in a timely manner and meet the performance objectives and

guidelines for operational readiness both outlined in NFPA 1710 Urban and OSHA 29 CFR 1910.134 G3 and G4.

Additionally, the FACETS report in 2021 concluded that Special Operations capabilities required some reinvestment and recommended that given the complexity of the BCFD's operating environment, consideration should have been given to additional staffing, training, and resources for effectively handling special operations incidents. When compared to other cities across the country, a second rescue would be supported based on city size, population density, and call volume. The chart below verifies this statement:

Department	Staffed Rescues	City Size (sq mi)	Population Density (sq. mi)	Call Volume (2023)
Baltimore City	**1 Rescue**	**92.05 sq mi (water included)**	**7,235.43**	**187,035**
Boston	2 Rescues	41.3	13,976.98	152,980
Washington, D.C.	3 Rescues	61.1	10,984.43	210,998
San Francisco	2 Rescues	46.87	18,634.65	175,124
Milwaukee	2 Rescues	96.80	6,000	109,134
Wichita	2 Rescues	163.59	2,454.1	57,701

The robust weekly training schedule that surrounds Rescue Company 1 lends itself to a large amount of time throughout each week that the unit is out of service. This in turn leads to higher mental stress having to spend much of the day training and then much of the remaining part of the day responding to incidents special in nature. A second rescue would support one Heavy Rescue being out of service while the other Heavy Rescue stays in service and is prepared to respond to calls throughout the city. Additionally, with only one staffed Heavy Rescue, significant incidents that last multiple hours result in a physical and mental exhaustion not seen by normal units within the city. Physical stress reflects to cognitive impairment. In establishing a second Heavy Rescue and doubling the manpower, the Department would reduce its impairment by half from the personnel assigned to the Heavy Rescue Companies.

RECOMMENDATION(S):

1. The BCFD strategically add a second Heavy Rescue with a minimum of five (5) personnel per shift.
2. The BCFD researches and utilizes the Federal Government's Assistance to Firefighters Grants (AFG) for Staffing for Adequate Fire and Emergency Response (SAFER) program for initial funding opportunities.

PREVIOUS REPORT(S)

- BCFD Facets Report 2021, p. 94
- Stricker Street 2022, p. 125

REFERENCES:

- BCFD MOP 602-8: RAPID INTERVENTION TEAM (RIT) (TWO-IN TWO-OUT)
- U. S. Census Bureau (2020). *Quick Facts- Baltimore City, Maryland.* Retrieved from www.census.gov/quickfacts/fact/table/baltimorecitymaryland
- NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments 2020 Edition. In *NFPA Codes and Standards Online*. Retrieved from https://www.nfpa.org/codes-and-standards
- Occupational Safety & Health Administration [OSHA]. (2016). Regulations (Standards-29 CFR 1910.134 G3, G4). Retrieved from https://www.osha.gov

CAUSAL FACTOR: STAFFING #6 – INSTRUCTOR QUALIFICATIONS

Summary: Revise the Fire Academy staffing process to ensure subject matter experts are disseminating course curriculum in line with current practices and real-world scenarios.

FACTS:

During interviews with members of EMT/FF Pitts' recent recruit class, instructor ability and credibility were both viewed negatively.

Fire Academy Instructors are ranked and selected based on an interview process administered by BCFD Human Resources. The major minimum qualification is the Maryland Fire and Rescue Institute (MFRI) Instructor II course. Instructors selected from the promotional list are transitioned from shift work to a daytime schedule. Instructors are not firefighters and there is not a field position for them to work in after promotion. This change removes them from an environment where they regularly engage in job-specific tasks and practice their skills.

Promoted Instructors are required to obtain and maintain Maryland Instructor Certification Review Board (MICRB) certification as a stipulation of their promotion. This certification requires Instructors to demonstrate skills to obtain it. MICRB Recertification training is targeted at best practices for instruction and not current firefighting tactics or best practices. Instructors are not required to repeat their skills ever again after they obtain their initial certification.

Additionally, the roles of Fire Academy staff are not clearly defined in the BCFD Rules and Regulations, which creates ambiguity around their assigned duties.

The Fire Academy relies heavily on field members working overtime as adjunct instructors to staff various training activities for recruits and those in the field. This process provides instructor credibility, as the members conducting the training are currently working in the field. It also ensures instructor accountability for training accuracy, because they have a stake in the ability of the student. The field member teaching will ultimately be working with the personnel they are training.

RECOMMENDATION(S):

1. Add skills evaluation in conjunction with interviews for instructor promotion evaluation to ensure candidates are adequately qualified.
2. Implement annual skills evaluation for each discipline that is taught by the instructor to maintain their teaching status.
3. Require annual tactics, techniques and procedures training for all instructors, both field and promoted to ensure best practices are taught with continuity of the message.
4. Incorporate detailed position descriptions for Fire Academy staff into the Rules and Regulations, clearly defining the responsibilities of each role.

5. Ensure instructor credibility and accountability by:
   - Continuing the incorporation of field members in all levels of training.
   - Adding a frequent, consistent field component to the instructor position.

PREVIOUS REPORT(S):

- Calverton Road – pp. 68, 84

CAUSAL FACTOR: STAFFING #7 – FCB LIAISON

Summary: The FCB Liaison position should be permanently staffed to ensure efficient Operations by improving Communications.

FACTS:

In September 2023, the BCFD started a pilot program for a Liaison between BCFD Operations and Communications. Specifically, "members working in this position will be the direct link between Communications and Operations with the primary responsibility of monitoring fire ground operations and assisting Communications dispatchers and officers with fire ground accountability" (Bulletin dated September 28, 2023). The FCB Liaison position was not staffed on the date of this incident.

Companies were dispatched out of position from their normal assignments for a box alarm in this geographic area. This was largely due to the dispatch of lower acuity EMS calls, as well as a non-emergency lift assist (Truck 18). This caused the dispatch assignment to have the truck companies which would normally not be dispatched on the second alarm, to be on the initial dispatch, creating a lack of familiarity with the area and personnel operating.

The FCB Liaison position, which is typically vacant unless filled with overtime, may have been able to influence the dispatch procedures of this incident. Rewriting the roles and responsibilities of this position to influence and recommend reassigning units from lower acuity and non-emergency incidents to higher priority incidents based on need and geography, would give the FCB Liaison the autonomy to improve operations.

In February 2025 the BCFD rescinded the pilot program for the FCB Liaison. The position was only staffed for 15% of the time in the months of January 2025 and February 2025 combined prior to the end of the pilot.

RECOMMENDATION(S):

1. Permanently staff the FCB Liaison position to ensure efficient Operations by improving Communications.

REFERENCES:

- BCFD Bulletin, September 28, 2023: Operations Liaison Pilot Program at Fire Communications; Rescinded February 28, 2025

CAUSAL FACTOR: EQUIPMENT

INTRODUCTION

The Internal Review Team conducted a thorough investigation into the equipment involved in the Linden Heights incident, focusing on identifying opportunities for enhancement within the BCFD. This comprehensive review revealed both successes and areas requiring attention, providing a path for future progress.

The BCFD has shown immediate responsiveness in adjusting equipment based on this incident. As of the writing of this report, the BCFD has adjusted 33% of equipment-related recommendations to ensure members have the tools they need on future incidents with similar challenges. These adjustments are evidenced by highlighting the item in RED or YELLOW and then adjusting the Description to GREEN.

SUMMARY OF RECOMMENDATIONS

A description of the specific facts relating to Equipment with recommendations follows. Below is a summary of recommendations for the Equipment section:

ITEM	SUMMARY	DESCRIPTION
Equipment #1	RIT Bags	Ensure all suppression units, including Battalion Chiefs, carry a RIT Bag in a labeled compartment.
Equipment #2	HEROS Shears	The BCFD added the HEROS Shears to every RIT bag along with the Blue Medical Bag that every EMS unit carries in July 2024.
Equipment #3	Mobile Maintenance	Ensure that the department use a Mobile Maintenance Vehicle (service truck) with adequately trained personnel for minor repairs that can be completed in the station so that units will be able to return to service quicker in their district.
Equipment #4	Thermal Imaging Camera	Ensure all Draeger UCF7000 TICs are positioned to allow the officer easy access to the camera, either by relocating the charger or by providing and additional batter.
Equipment #4	Thermal Imaging Camera	Ensure all members are trained on the proper use of the TIC camera as part of ongoing incident size-up, including capabilities, usefulness and limitations (see also *Findings-Field Training).*
Equipment #4	Thermal Imaging Camera	Ensure that the record feature is enabled on all Thermal Imaging Cameras. This task was completed in November 2023 but the **New Draeger Fire Vista TICs have no record feature.**
Equipment #5	SCBA	Purchase high temperature facepieces for all members of the Fire Department to satisfy current NFPA standard.
Equipment #5	SCBA	Continue with the contracted upgrade to the newest model of Draeger SCBA which includes a protective sleeve over the UEBSS hose when the equipment becomes available.
Equipment #5	SCBA	A Research and Development team be implemented immediately to assist with selecting SCBA that reduces SCBA failures as seen in this report.

Equipment #6	Gemtor Harness	Ensure continued annual bailout training, along with firefighter removal training with emphasis on how to utilize the Gemtor harness for firefighter removal during MAYDAY.
Equipment #6	Gemtor Harness	The BCFD should maintains its commitment to the firefighter rescue initiatives, particularly the Gemtor Harnesses and Bailout Kits, which have proven effective during operations.
Equipment #7	Turnout Gear	The BCFD should continue using the current turnout coats and pants but should ensure ongoing evaluations of gear performance in extreme conditions to explore possible improvements.
Equipment #7	Turnout Gear	The BCFD should maintain its commitment to firefighter rescue initiatives, particularly the Gemtor harnesses and Bailout Kits, which have proven effective during operations.
Equipment #7	Turnout Coat Rescue Ring	The inclusion of a 4" D-ring in the closure system of turnout coats be retained as it provides an essential option for vertical and horizontal movement of firefighters in distress.
Equipment #8	Coverage Monitoring Software	Consider purchasing a real-time, dynamic software application available to all Battalion Chiefs, Shift Commanders and Communications supervisors that provides coverage monitoring, alerting and transfer recommendations.
Equipment #9	Research and Development	Create a formal team for the research, development and implementation of equipment, PPE, uniforms, and technology purchases.
Equipment #10	Radio Strap	Purchase a radio strap for each suppression riding position. Selection of an appropriate strap should be at the recommendation of the Research and Development Committee.
Equipment #10	Radio Strap Policy	Create a policy for personnel to utilize the radio strap, worn under the coat, on all IDLH call types.
Equipment #11	Uniforms	Create a working group consisting of the Fire Department representatives, both 734 and 964 union representatives, and the Fire Department's Research and Development group to propose new options of fire resistive (FR) uniform attire that will bring the department and its members into compliance with NFPA 1975.
Equipment #12	CYANOKIT	Maintain the Optional Maryland Medical Protocol for CYANOKIT for the BCFD.
Equipment #13	Gloves	Utilizing an internal Research and Development Team (*see Equipment #9),* the Fire Department should conduct a wear test evaluation of several different manufacturers' gloves to determine which glove is best suited for the BCFD.

Equipment #14	Mercedes Kracken-EXO Hose	Ensure that the Fire Department continue its commitment towards supplying apparatus with the most technologically superior fire suppression equipment.
Equipment #14	Mercedes Kracken-EXO Hose	Should fire hose and manufacturer need to be replaced- The Research and Development committee be used in in the testing and recommendation process.

CAUSAL FACTOR: EQUIPMENT#1 – RIT BAGS

Summary: Units had to look in multiple compartments to find RIT bags. Ensure RIT equipment compartments are properly labeled for quick location of tools.

FACTS:

RIT equipment accessibility was a challenge during the Linden Heights incident. As a result of Stricker Street report recommendations, the BCFD increased their RIT bag compliment in June 2023 to include all Battalion Chiefs, all Squads, and one additional Engine per Battalion (BCFD Bulletin: Additional RIT bags placed in field dated June 8, 2023). In August 2023, all Suppression units in the BCFD were outfitted with RIT bags (BCFD Bulletin: RIT Bags dated August 31, 2023). Both bulletins advised members to become familiar with the locations of the bags and to locate them in the same compartment when possible. Engine 29 did not have a RIT decal indicator affixed to the proper compartment yet.

During interviews of personnel operating on this incident, once the MAYDAY was called, members reported difficulty locating the RIT bag on E29. They had to open multiple doors until it was located, causing a delay. There was also a delay in locating a second RIT bag once the first bag was deployed.

RIT compartment labeling was started by BCFD Logistics in September of 2023, prior to this incident. It was not completed or communicated to all members by the date of this incident.

RECOMMENDATION:

1. Ensure all suppression units, including Battalion Chiefs carry a RIT Bag in a labeled compartment. This recommendation was successfully implemented within weeks of this incident.

PREVIOUS REPORT(S):

- Stricker Street- p. 127

REFERENCES:

- BCFD Bulletin: RIT Bags dated August 31, 2023
- BCFD Bulletin: Additional RIT bags placed in field dated June 8, 2023

Equipment Photo #1

RIT Compartment

L: Outside, R: Inside

CAUSAL FACTOR: EQUIPMENT #2 – HEROS SHEARS

Summary: During this incident, EMS units found it difficult to cut and remove turnout gear. The BCFD has already added the HEROS Shears to RIT bags and EMS unit bags.

FACTS:

During interviews it was found that multiple members of both suppression and emergency medical services found it very difficult to remove the turnout gear of injured members with the trauma shears that were carried in the EMS bags assigned to units that were operating on the fireground.

During Advanced Firefighter Removal training at the Fire Academy, the utilization of the HEROS Shears was found to make turn out gear removal much easier than using standard trauma shears.

As a result of this incident and findings from the AFR class, the BCFD updated EMS units and RIT bags to have HEROS Shears in July 2024. This was further reinforced with Training Manual 101-8-1: HEROS Shears, released in August 2024.

RECOMMENDATION:

1. The BCFD has already added the HEROS shears to every RIT Bag as well as the Blue Medical Bag that every EMS unit carries.

REFERENCES:

- BCFD Bulletin- HEROS Shears Dated July 30, 2024
- BCFD Training Manual 101-8-1: HEROS Shears dated August 6, 2024

Equipment Photo #2

Comparison of HEROS Shears (L) with Typical trauma shears (R)

CAUSAL FACTOR: EQUIPMENT #3 – MOBILE MAINTENANCE

Summary: A Fire Apparatus Coordinator Mobile Maintenance Vehicle would be a helpful tool to reduce Operational unit out-of-service times.

FACTS:

During interviews it was found that Truck Company 27 was out of service at the Fire Apparatus Coordinator facility to have a magnet installed for the Nederman fire station exhaust system. Truck Company 27 had to travel 13 miles across the city to the Fire Apparatus Coordinator's Office to have this repair completed, which pulled them far out of their district. This is a simple repair that could have been completed in station by a mobile maintenance vehicle. This would have allowed the unit to have returned to service in a much quicker time. Best practice by other Fire Departments in the area is to use this type of vehicle to assist in the repair of apparatus for minor repairs. This has been found to help alleviate the out of service time for departmental vehicles.

Currently, the BCFD uses a road maintenance vehicle for small, after-hours repairs on evenings and weekends for limited issues like air and radiator hoses. This process is limited by a small number of members' availability to staff the unit.

RECOMMENDATION:

1. Ensure that the BCFD use a Mobile Maintenance Vehicle (service truck) with adequately trained personnel for minor repairs that can be completed in the station so that units will be able to return to service quickly in their district.

PREVIOUS REPORT(S):

- FACETS p. 79

CAUSAL FACTOR: EQUIPMENT #4 – THERMAL IMAGING CAMERA

Summary: The Draeger UCF 7000 Thermal Imaging Camera (TIC) needs to be readily accessible for the officer's position and have the recording features enabled in the camera programming. TIC use should also be reinforced through training.

FACTS:

Thermal imaging cameras (TICs) were not utilized to their fullest potential and ability during initial size-up or initial tactics. The officer of Engine 29 did not utilize the Draeger UCF 7000 thermal imager in the early minutes of the Linden Heights incident. The BCFD utilizes 3 different types of thermal imaging cameras. All seated positions have just recently been provided with a personal thermal imager; Seek Reveal Fire Pro, per Bulletin dated May 16, 2023. Additionally, the officer position, has/utilizes a Draeger UCF 7000. Draeger's Fire Vista thermal imager has begun replacing the Draeger UCF 7000's as of Spring 2025.

During interviews it was found that only one unit officer acknowledged using the Draeger TIC on the fireground. Some members stated that the camera and charger were mounted in the compartment in the rear of the cab and made it either difficult to retrieve or they just forgot about it with it being out of sight. This could be corrected by relocating the charger to an accessible location for the officer or leaving the charger in place or providing an additional battery for easy replacement.

Also, during the investigation, it was revealed that the Draeger TICs could record but the BCFD had never enabled this feature. Adjusting the programming to allow for recording could easily be corrected by the Air Mask Repair Office. This would allow for incidents to be downloaded and reviewed for training and informational purposes. The recording feature was enabled on all Draeger UCF 7000 TICs by the Air Mask Repair office in November 2023.

The BCFD did not provide thermal imaging training in 2015 when the Engine Companies were provided the thermal imaging cameras nor in 2023 when all additional riding positions received the Seek thermal imaging cameras. This is important to note because any new officer or member promoted or hired after 2013 has not received formal training in the department's two types of thermal imaging cameras.

The BCFD acquired a third Thermal Imaging Camera in November 2024, the Draeger Fire Vista. This camera is smaller than the UCF 7000 but larger than the Seek Reveal Fire Pro. It does NOT have a recording feature. Similarly to 2015, no training was conducted other than the HEAT and AFR courses, which are optional. Instructions for its use have been added to the Training Manual on November 13, 2024; T.M 131-1.

Equipment Photo #4

Draeger Fire Vista

RECOMMENDATION(S):

1. Ensure all Draeger UCF 7000 or Fire Vista TICs are positioned to allow the officer easy access to the camera, either by relocating the charger or providing an additional battery.
2. Ensure all members are trained on the proper use of TIC camera as part of ongoing incident size-up, including capabilities, usefulness and limitations (see also *Training #6-Field Training).*
3. Ensure that the record feature is enabled on all Thermal Imaging Cameras that have recording capability. This task was completed in November 2023 **but the new Draeger FireVista camera does not have the ability to record.**

PREVIOUS REPORT(S):

- Glover Street
- Stricker Street p. 148
- East Avenue #12

REFERENCES:

- BCFD Bulletin dated May 16, 2023: Seek Thermal Imaging Camera Fire Pro-X
- BCFD Training Manual dated November 13, 2024: Draeger UCF Fire Vista Thermal Imaging Camera

CAUSAL FACTOR: EQUIPMENT #5 – SCBA

SUMMARY:

The Fire Department should continue to collaborate with SCBA manufacturers/engineering on the department's next generation of SCBA breathing apparatus due to multiple structural and component failures of the department's current breathing apparatus.

FACTS:

It is critically important to provide context into this SCBA recommendation. The SCBA, given the environment that Captain Rinaldo and EMT/FF Pitts encountered, regardless of NFPA standard/edition or manufacturer, would not have held up in the fire environment presented on Linden Heights. NFPA standards on Personal Protective Equipment are currently tested to a temperature of 500°F and are classified into 3 categories of operating classes: Routine, Ordinary, and Emergency with Ordinary and Emergency having subcategories based on temperature ranges. Personal Protective Equipment are designed and tested to operate in conditions within the Routine and Ordinary categories. The Emergency categories are temperatures to that of flashover and higher and are not sustainable regardless of Personal Protective Equipment worn or by what manufacturer.

The Department is currently operating Draeger PSS 7000 breathing apparatus compliant to NFPA 1981: Open Circuit Self Contained Breathing Apparatus (SCBA) for Emergency Services, 2007 Edition. The Departments current SCBA were purchased in 2012 from the 2012 Assistance to Firefighters Grant Directorate (AFG). The Department is currently not compliant with NFPA 1951: Standard on Protective Ensembles for Technical Rescue Incidents. This standard requires SCBA to be replaced every 10 years (excluding cylinders which are replaced every 15 years). This standard is set by the NFPA to ensure that fire departments are never more than 2 standard update cycles behind current standards. NFPA updates their standards roughly every 5 years which gives the departments the opportunity to make those 5-year incremental updates to their current SCBA without having to purchase completely new units. The Department's SCBA at the time of the Linden Heights incident was 3 standards behind the current standard and 12 years old.

Substantial changes were made to the NFPA 1981 standard between 2007 edition and the 2013 edition. These changes were predominately due to several SCBA failures that resulted in Line of Duty Deaths prior to and leading up to 2013. The three most notable LODD's driving that change were 30 Dowling Circle, Baltimore County Fire Department NIOSH report F2011-02, Pennsylvania State Fire Training Academy NIOSH report F2005-31, and 3146 Cherry Road NE, District of Columbia Fire Department NIOSH report F99-21. The most significant change with the 2013 edition was establishing specific standards and testing for the face piece. The 2007 edition, which the BCFD utilized up until July 2025, does not have a specific testing requirement for the face piece lens. The only requirement for the face piece was a visual acuity and positive pressure test. The face piece testing was included in the general SCBA testing process which is outlined below:

TESTING PROCEDURE for Entire SCBA 2007 Edition:

- Complete SCBA mounted on test mannequin breathing @ 40 L/min and placed in the test oven at 203° F
- Exposure time of 15 minutes
- After 15 minutes in the oven, breathing is increased to 103 L/min and pulled out of the test oven
- SCBA exposed to direct flame for 10 seconds
- Test mannequin and SCBA then dropped 6 inches

The testing procedures for NFPA 1981: Standard on Open Circuit Self Contained Breathing Apparatus (SCBA) for Emergency Services, 2013 Edition brought 4 additional tests added to the standard with two specific testing requirements for the face piece itself. Those two tests for the face piece were the elevated temperature heat and flame resistance performance test and the lens radiant heat test. The department did not update to the high temperature NFPA 1981: 2013 Edition face piece since purchasing new SCBA just 1 year prior in 2012.

The new 2013 edition testing requirements are outlined below:

TESTING PROCEDURE for Face Piece Temp Test – Elevated Heat Temperature & Flame Resistance Performance 2013 Edition:

- Heat soak SCBA @500°F for 5 mins (in addition to current requirement of 200F with visual acuity test)
- Followed by 10 sec. direct flame contact @ 1800° F
- 6-inch drop test
- Maintain positive pressure for 24 mins during testing

TESTING PROCEDURE for Face Piece Temp Test – Lens Radiant Heat Resistive Performance 2013 Edition:

- Face piece to a radiant heat flux of 15 kW/m2 for 5 minutes
- As part of this test, the facepiece is required to maintain an air supply (positive pressure) inside the mask for a total of 24 minutes
- Breathing at 40 L/min @ 24 breaths/min

INCIDENT SCBA DETAILS

Both, Captain Rinaldo's and EMT/FF Pitt's SCBA had multiple catastrophic failures of its components while operating on the interior of 5210 Linden Heights Avenue. Not only did both of their face piece

and medium pressure buddy breather lines fail, but Truck 12's Officer stated in his interview that his first attempt to remove EMT/FF Pitts was unsuccessful due to the deterioration of his SCBA harness. The seven-minute timeline of SCBA Data Log of Captain Rinaldo's and EMT/FF Pitts' SCBA usage follows.

Captain Rinaldo SCBA Data Log					EFF Pitts SCBA Data Log				
Time	Event	Pressure PSI	Breath LPM	Description	Time	Event	Pressure PSI	Breath LPM	Description
1545	None				1545	On/Off	On		SCBA turned on
1545	On/Off	On		SCBA turned on	1545	Misc Event			Motion sensor enabled
1545	Misc Event			Motion sensor enabled	1545	Pressure	4085.26	0	
1546	Pressure	3938.79	0		1546	Pressure	3977.42	57.75	
1546	Pressure	3775.1	94.87		1546	Pressure	3834.8	99.58	
1546	Pressure	3662.38	99.05		1546	Pressure	3726.84	96.09	
1547	Pressure	3582.29	82.36		1547	Pressure	3660.8	71.97	
1547	Pressure	3549.55	47.55		1547	Pressure	3605.06	60	
1547	Pressure	3535.05	24.75		1547	Pressure	3528.48	67.98	
1548	Pressure	3542.3	0		1548	Pressure	3476.38	55.66	
1548	Pressure	3553.29	0		1548	Pressure	3417.13	55.68	
1548	Pressure	3545.93	4.65		1548	Pressure	3354.48	58.41	
1549	Pressure	3498.69	31.72	FIRST MAYDAY	1549	Pressure	3309.29	48.43	
1549	Pressure	3527.8	0	SECOND MAYDAY	1549	Pressure	3229.31	68.25	
1549	Pressure	3535.05	0		1549	Pressure	3194.42	45.15	
1550	Pressure	3247.77	185.5		1550	Pressure	2923	200	
1550	Pressure	2880.4	200		1550	Pressure	2293.15	200	
1550	Pressure	1967.58	200		1550	Pressure /ALARM	1423.15	200	Low pressure alarm

1551	Pressure/ ALARM	1214.71	200	Low pressure alarm	1551	Watchd og Timeout	N/A	N/A	Electrical fault- motion sensor enabled again
1551	Pressure	367.26	200		1551	Pressure /ALAR M	153.04	0	Low pressure alarm
1551	Pressure/ ALARM	50.86	200	Motion pre- alert on	1551	Pressure /ALAR M	0		Manual DSU alarm
1552	Pressure/ ALARM	0		ADSU (Motion) alarm	1552	Pressure	0		Truck 12 has bars off, can see EMT/FF Pitts inside
1552	Pressure	0			1552	Pressure	0		
1552	Pressure	0			1552	Pressure	0		

The SCBA Data Log gives 3 data sets per minute, one every 20 seconds. It also gives significant events, such as when the SCBA is turned on and when an alarm is activated, either due to low pressure or PASS device. Normal breathing rates for SCBA can range from 40-80 LPM depending on the amount of work the member is performing. An uncontrolled free flow of air is evidenced by a pressure of 200 LPM. The Watchdog Timeout in the chart is evidence of an electrical fault. This usually occurs when batteries are exchanged in the SCBA but based on the conditions the members experienced this fault likely occurred due to high heat conditions.

Captain Rinaldo turned on his SCBA less than 20 seconds after EMT/FF Pitts. Less than 2 minutes after turning on his SCBA, and while inside the building, Captain Rinaldo's air flow stopped. There is no definitive explanation for this data. It could be that the member experienced an SCBA malfunction and intervened by depressing the airflow stop on his 2nd stage regulator. There is no way to confirm this as fact. It could also be that the high heat conditions caused a regulator malfunction that later corrected itself upon cooling. Shortly after airflow returns, Captain Rinaldo called two MAYDAYS.

EMT/FF Pitts' SCBA data showed regular breathing expected of someone working for about 4 minutes. At 1550 hours, both EMT/FF Pitts' and Captain Rinaldo's SCBA were free flowing air. This air leak was either due to facepiece damage, buddy breather line damage, or both. EMT/FF Pitts experienced a total loss of air 1 minute after the damage. Captain Rinaldo's air was completely lost within 2 minutes. Less than 1 minute after EMT/FF Pitts' air is depleted, the Captain of Truck 12 removed the bars from the Window and could see the member inside.

Both members' cylinders were depleted in less than 7 minutes. Captain Rinaldo was without a breathing supply while inside and endured conditions of a rapid-fire event for 52 seconds. EMT/FF Pitts was without a breathing supply while inside and endured conditions of a rapid-fire event for 3 minutes and 10 seconds.

THIRD PARTY TESTING

Several components of the SCBA and PPE were sent to Underwriters Laboratory (UL) for third party testing. Those components are listed below with onset of melting/softening temperature and the onset of decomposition temperature (temperature at which mass loss is recorded) being tested.

Linden Heights PPE Thermal Exposure Experiment Results

Onset of Melting & Decomposition Temperatures

Item	Melting/Softening Onset Temperature	Onset of Decomposition Temperature
Helmet Bourke	375-400°F	833-851°F
Helmet Brim Laminate	NA	400-446°F
Helmet Brim Edging	263-273°F	500-554°F
Helmet Shield	NA	446-491°F
Helmet Reflector Sticker	NA	446-491°F
SCBA Facepiece Hard Plastic	356-374°F	716-760°F
SCBA Facepiece Seal	NA	482-536°F
SCBA Facepiece Lens	293°F	849-903°F
Universal Emergency Breathing Supply System (UEBSS)	NA	428 - 464°F
Hood – Black Material	NA	410 – 446°F
Hood – Gray Material	NA	410 – 446°F

UL Research Institutes

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There were several individual components of the overall SCBA that failed during the interior firefight that affected Captain Rinaldo and EMT/FF Pitts as well as those firefighters assigned to their rescue. The list of those failures is outlined below.

Captain Rinaldo:

- Both left and right upper shoulder strap webbing was burned completely through and away from their connection points to the SCBA back plate and harness.
- Metal butterfly clip that connects the left shoulder strap to the back plate failed resulting in separation of the hard plastic connection point to the back plate.

EMT/FF Pitts:

- Both left and right waist strap metal butterfly clips that connects the waist strap to the back plate failed.
- Breathing air cylinder securing strap failed causing air cylinder to pull away from the back plate and harness.

Both Captain Rinaldo and EMT/FF Pitts:

- Both face piece (NFPA 2007 Edition) lens failed.
- UEBSS Buddy Breather Whip burned through and failed (one 3” from regulator block and one 9” from regulator block).

Cpt. Rinaldo’s SCBA – Shoulder Strap Failure Due to Heat (Strap and Clips)

Cpt. Rinaldo’s SCBA – UEBSS Failure 3” from Regulator Block of Buddy Breather whip)

Cpt. Rinaldo’s SCBA – Beginning Stage of Failure in Lung Demand Valve Hose

Cpt. Rinaldo’s SCBA – Failure of Cylinder Securing Strap and Shoulder Strap

Cpt. Rinaldo's SCBA – Failure of Structural Clip Due to Heat and Elongation

Cpt. Rinaldo's SCBA – Failure of Face Piece

Cpt. Rinaldo's SCBA – Failure of Face Piece

Cpt. Rinaldo's SCBA – Failure of Face Piece

EMT/FF Pitts' SCBA – UEBSS Failure 9" from Regulator Block of Buddy Breather

EMT/FF Pitts' SCBA – Failure of Cylinder Securing Strap

EMT/FF Pitts' SCBA – Failure of Waist Strap and Connection Points to Harness

EMT/FF Pitts' SCBA – Beginning Stage of Failure in Lung Demand Valve

EMT/FF Pitts' SCBA – Failure of Shoulder Straps and Connection Point

EMT/FF Pitts' – Failure of Face Piece

EMT/FF Pitts' – Failure of Face Piece

EMT/FF Pitts- Failure of Face Piece

The BCFD was able to use American Rescue Plan Act (ARPA) funds to upgrade SCBA after this incident occurred. In July 2025 the BCFD placed in service the currently available model of SCBA offered by Draeger which is compliant with the 2018 NFPA Standard. This model includes the upgraded, high temperature facepiece lens. As part of the contract, the BCFD was also able to secure a future equipment exchange with the newest NFPA standard when that equipment becomes available. According to Draeger, their application for this newest model has included an additional protective sleeve over the UEBSS hose for the 2025 edition of NFPA 1970.

RECOMMENDATION(S):

1. Purchase high temperature face pieces for all members of the Fire Department to satisfy current NFPA standard. This was automatically included in the July 2025 SCBA upgrade.
2. Continue with the contracted upgrade to the newest model of Draeger SCBA which includes a protective sleeve over the UEBSS hose when the equipment becomes available.
3. The Research and Development team be implemented immediately to:
    - Conduct an official BCFD in-depth study and testing to examine past and current departmental SCBA failures and incorporate that data and end-user needs into a proposal with recommended changes. This performance study is crucial due to the failure of the SCBA's harness and buddy breather whip.
    - Inclusion in the decision-making process alongside the fire department to make decisions as a cohesive team on SCBA and PPE selection.
    - Meet with Draeger Global to inspect the Linden Heights incident SCBA's and identify the various failure points for future improvements.

PREVIOUS REPORT(S):

- Glover Street
- Stricker Street p. 66

REFERENCE(S):

- NIOSH F2011-02 – 30 Dowling Circle
- NIOSH F2005-31 – State Fire Training Academy, Pennsylvania
- NIOSH F99-21 – 3146 Cherry Road
- NFPA 1981; Standard on Open Circuit Self Contained Breathing Apparatus (SCBA) for Emergency Services, 2013 Edition

CAUSAL FACTOR: EQUIPMENT #6 – GEMTOR HARNESS

Summary: The Gemtor Harness was successfully utilized to remove the downed firefighters from the IDLH atmosphere during the MAYDAY.

FACTS:

During interviews of members involved in the MAYDAY operation, members reported structural integrity failures of the SCBA packs. They reported that the shoulder straps "broke" and "came apart." Members removing the downed firefighters reported using the Gemtor Harness affixed to turnout pants issued with Bailout kits for rapid removal from building.

In 2021, the BCFD was awarded funding from FEMA through the Assistance to Firefighters Grant for the Gemtor Harnesses and Bailout kits for all members, to include the gear modifications and instructor costs. The BCFD started training members on this equipment in January 2023. After initial training, members have received and continue to receive annual training on this equipment. The BCFD has conducted initial training and one cycle of annual training to date, with the second annual training cycle to begin early 2025.

RECOMMENDATION:

1. Ensure continued annual bailout training and advanced firefighter removal training with emphasis on how to utilize the Gemtor harness for firefighter removal during a MAYDAY.

PREVIOUS REPORT(S):

- East Avenue

Equipment Photo #6

Gemtor Harness

CAUSAL FACTOR: EQUIPMENT #7 – TURNOUT GEAR

Summary: Overall, the turnout coats and pants issued by the BCFD reacted to the extreme heat conditions as expected. However, members involved in the rescue experienced difficulties during attempts to remove the members from the structure.

FACTS:

The turnout coats and pants currently used by the BCFD have excellent ratings for Thermal Protective Performance (TPP). Despite this, they were unable to withstand the extreme conditions encountered during the incident, exceeding both the TPP and Total Heat Loss (THL) limits. This led to severe thermal injuries sustained by members of Engine 29.

The turnout coat integrated Drag Rescue Device (DRD) failed due to significant deterioration of the outer shell and inner liners, rendering it ineffective for rescue operations. Additionally, no member reported attempting to use it. The shoulder and waist straps on the Self-Contained Breathing Apparatus (SCBA) back frames were severely compromised. Interviews with members of Engine 52 and Truck 12 confirmed that these straps failed when used as grab points during rescue attempts.

The use of the Gemtor Harness and Pompier Hook demonstrated its effectiveness as part of the rescue efforts. This equipment was crucial for the removal of Engine 29's members.

A 4" D-ring integrated into the closure system of a turnout coat will allow for a secure attachment to the Gemtor Harness's Pompier Hook, which has been found to be an effective method for safely moving or lifting unconscious firefighters. The BCFD started adding the D-ring to the turnout coat when sent for annual inspections in October 2024. It will take time to cycle all turnout gear through for D-ring installation.

RECOMMENDATION:

1.	The BCFD should continue using the current turnout coat and pants but should ensure ongoing evaluations of gear performance in extreme conditions to explore possible improvements.
2.	The BCFD should maintain its commitment to firefighter rescue initiatives, particularly the Gemtor harnesses and Bailout Kits, which have proven effective during operations.
3.	The inclusion of a 4" D-ring in the closure system of turnout coats should be retained as it provides an essential option for vertical and horizontal movement of firefighters in distress.

PREVIOUS REPORT(S):

- Glover Street
- Liberty Heights #6
- East Avenue #11

Equipment Photo #7

Turnout D-ring

CAUSAL FACTOR: EQUIPMENT #8 – COVERAGE MONITORING SOFTWARE

Summary: The BCFD does not have real-time accountability of unit coverage throughout the city.

FACTS:

There was a significant service delivery gap during the initial dispatch for Linden Heights. Particularly, the 3 closest truck companies (Trucks 27, 12 and 18) were either out of service for maintenance or assigned to other calls. The closest truck on the box responded from 4.0 miles away.

Currently, the Shift Commander (CAR5) is responsible for maintaining unit coverage and gaps throughout the city. The current practice utilizes a dry-erase board with an overlay of the city and magnetic pieces to represent coverage gaps. However, this only considers pre-determined unit delays (i.e. closures due to staffing, OOS for training, etc.) and not dynamic gaps due to increased call volume.

RECOMMENDATION:

1. Consider purchasing a real-time, dynamic software application available to all Battalion Chiefs, Shift Commanders and Communications supervisors that provides coverage monitoring, alerting and transfer recommendations. These systems provide emergency dispatchers and supervisors with automated, optimal transfer recommendations while simultaneously allowing them to continuously monitor and identify any gaps in coverage.

PREVIOUS REPORT(S):

- FACETS p.100

CAUSAL FACTOR: EQUIPMENT #9 – RESEARCH AND DEVELOPMENT

Summary: Equipment and technology have played both positive and negative roles throughout this investigation. The BCFD should create a research and development team to thoroughly evaluate the various PPE, uniforms, equipment and technology purchases they make going forward and assist with implementation.

FACTS:

Recently incorporated gear upgrades proved to be advantageous to the removal of both firefighters while members operated under duress. The Gemtor harness was the singular most useful device to grasp for removal of the firefighters on this incident. The rescuing parties stated that they used the harness due to training and instinct, respectively, to assist in the drag/carry methods in this removal. The issued turnout gear was also cited in this report as a having played a positive role. The BCFD purchases some of the highest rated turnout gear, with a Thermal Protective Performance (TPP) rating of 60.

Other technology and equipment factors identified in this report were negative. The SCBA was first grasped by rescuing members, but it disintegrated in their hands when force was applied during the rescue due to thermal degradation and decomposition. The SCBA facepieces and buddy breather whips of both members failed under high heat conditions. HEROS shears were used in training, but they were not purchased department wide. They would have been valuable to have on this incident. The Shift Commander's Office still uses a magnet board to monitor unit availability and determine transfers. A real-time, dynamic software system would have readily identified the truck company response gap that was experienced that afternoon.

A research and development committee could continuously monitor equipment and technology advances for opportunity to improve the BCFD. In April 2024 a meeting was held to attempt to start a group for this purpose. It was an informal process and due to attrition, it has not been pursued further. The progression of equipment over the last several years has been extremely positive within the BCFD. A committed point of contact to give members of all ranks the ability to recommend upgrades that could help our operational efficiency would help us not to overlook some of the great tactical upgrades that the fire service can offer.

Having an experience-based group of individuals who can research the best products and coordinate field testing will help the BCFD to gain progressive traction towards the implementation of the best, safest, and most operationally sound equipment. Utilizing a committee to present their findings, research, and plan of implementation would assist our Logistics, Support and Training sections of the BCFD, respectively, from their tasks as they are often inundated with the day-to-day tasks of their own jobs. By streamlining this process and having objective members not directly involved with the respective branches of the BCFD conducting these product evaluations, we can also ensure to not compound additional responsibilities to already overwhelmed portions of the department.

A diverse research and development team would include Operational members that have a range of experiences, positions, genders and physical sizes. Ideally, these members would be from high call volume companies who are also on the Instructor Adjunct list. Subcommittee members with specialized knowledge on the topic area should also be included as applicable. A team leader must be designated.

RECOMMENDATION:

1. Create a formal team for the research, development and implementation of equipment, PPE, uniforms, and technology purchases.

CAUSAL FACTOR: EQUIPMENT #10 – RADIO STRAP

Summary: The BCFD does not currently issue a radio strap for each riding position. EMT/FF Pitts' radio was not protected by his gear and suffered thermal damage that rendered it useless.

FACTS:

Both Captain Dillon Rinaldo and EMT/FF Rodney Pitts suffered significant damage to their portable radios while operating at 5210 Linden Heights Ave. Both radios were worn utilizing a radio strap with the RSM exposed. Captain Rinaldo's radio was worn in a strap, under his personal protective equipment (PPE) jacket while EMT/FF Pitts' was worn in a strap, over his PPE turnout coat.

While both radio units suffered severe thermal damage, Captain Rinaldo's radio remained functional for the duration of the incident. EMT/FF Pitts' radio RSM cord suffered a complete failure detaching into two separate pieces. As has been documented in other firefighter injuries both regionally and nationally, when EMT/FF Pitts' RSM failed, it caused the radio to short-out in the open transmission position, temporarily hampering communications.

Departments nationwide have adopted and implemented wearing portable radios on a leather sling under the PPE turnout coat as a policy. This not only secures the radio to the member, but it offers thermal protection of critical components of the system, primarily the RSM cord. The BCFD currently does not issue a radio strap or have a policy on proper wearing of the radio incorporated with the PPE.

RECOMMENDATION(S):

1. Purchase a radio strap for each suppression riding position. Selection of an appropriate strap should be at the recommendation of the Research and Development team. *(See also Equipment #9, in this document.)*
2. Create a policy for personnel to utilize the radio strap, worn under the coat, on all IDLH call types.

PREVIOUS REPORT(S):

- Glover Street

Equipment Photo #10

(L) FF Pitts' radio with RSM cord burned through. (R) Capt. Rinaldo's radio mostly intact due to protection inside coat

CAUSAL FACTOR: EQUIPMENT #11 – UNIFORMS

Summary: The Fire Department's provided uniform apparel should be revisited and come into compliance with industry standards defined in NFPA 1975.

FACTS:

Captain Rinaldo and EMT/FF Pitts cause of death was reported as smoke inhalation and thermal injuries. A third-party evaluation found thermal degradation with heat penetration in both members' turnout gear. This further confirmed that they were in a high heat environment that was beyond the design of their turnout gear.

Captain Rinaldo's burn injuries were extreme with mixed partial thickness and full thickness thermal burns to 48% Total Body Surface Area (TBSA) of the head, face, neck, bilateral upper extremities, bilateral hands, right thigh, and right buttock as stated to Sedgwick for purposes of their Workers' Compensation Status Report and File Strategy. As a result of the injuries sustained, he was taken to the operating room on October 23, 2023, for excision and debridement of burns to bilateral upper extremities and chest.

NFPA 1975: Standard on Emergency Services Work Apparel, sets the standard for protective clothing that is designed to withstand heat and prevent or reduce burn injuries for firefighters and emergency services personnel. The standard sets forth that work garments are constructed from flame-resistant textiles. The garments shall be stitched with thread of an inherently flame-resistant fiber, as noted in NFPA 1975 section 6.1.4. Flame resistant clothing (FR) resists ignition and self-extinguishes once the source of the ignition is removed. NFPA 1975 section 7.1.1.1 and 7.1.2.2 states that materials shall not melt, drip, separate, or ignite when tested to 500°F.

Currently, the Fire Department does not comply with NFPA 1975. The issued station uniform shirt is 5-11 Tactical short sleeve polo model number 41180-724 and is comprised of 60% cotton and 40% polyester pique knit fabric. The issued station uniform pants are Red Kap model number PT20NVO and is comprised of 35% cotton and 65% polyester fabric. Polyester is a synthetic material with a melting temperature of less than 500°F and is sensitive to heat and will melt on heating. As polyester burns, it shrinks and forms globs of molten material that stick to skin and continue to burn, causing even more injury and pain. Materials such as polyester can be treated for flame resistance but will generally melt and make burn injuries worse than those from natural fibers such as cotton, which when burned, char and turn into ash instead of molten resin on the skin.

Additionally, OSHA's 29 CFR1910. 269 states: "The employer shall ensure that each employee who is exposed to the hazards of flames or electric arcs does not wear clothing that, when exposed to flames or electric arcs, could increase the extent of injury that would be sustained by the employee."

RECOMMENDATION:

1. The BCFD create a working group consisting of Fire Department representatives, both Local 734 and 964 Union representatives and the Fire Departments Research and Development team *(See also Equipment #9 in this document)* to propose new options of fire resistive (FR) uniform attire that will the BCFD and its members into compliance with NFPA 1975.

Equipment Photo # 11

Captain Rinaldo's Uniform Shirt

REFERENCES:

- NFPA 1975
- OSHA's 29 CFR1910
- Commercial Reference for the Melting Temperature of 482 F° https://www.sternandstern.com/fibers/polyester-fiber/#:~:text=A%20wide%20range%20of%20fiber,F%20(295%C2%B0C).
- Technical Reference for two types of polyester. https://materials.fsri.org/ polyester microfiber and polyester bed skirt

CAUSAL FACTOR: EQUIPMENT #12 – CYANOKITS

Summary: The BCFD should obtain and maintain antidote kits for hydrogen cyanide exposure for members exposed to smoke.

FACTS:

Hydrogen Cyanide (HCN) is a byproduct of burning plastics. HCN is often released when everyday items found in most homes and businesses combust, making smoke inhalation the most common cause of acute cyanide poisoning (MIEMSS 2024). HCN is 35 times more toxic than Carbon Monoxide, and it shares many common exposure symptoms, including headache, nausea, vomiting, confusion, and shortness of breath (MIEMSS 2024). HCN is toxic at very low levels. HCN exposure has become a large enough concern that BCFD hazardous materials detection meters have a sensor for it. BCFD meters alarm when HCN levels exceed 2.5 parts per million (PPM). Meters are used for air monitoring after the fire is out to detect exposure levels during overhaul operations to help determine if SCBA should still be worn.

Both Captain Rinaldo and EMT/FF Pitts were exposed to smoke when their SCBA facepieces failed. Both members had injured airways with visible soot, indicating smoke inhalation. Because they inhaled smoke, it should be assumed that they were exposed to HCN. The state of Maryland has an optional supplemental medical protocol for the antidote to Hydrogen Cyanide- Cyanokits. This optional protocol was not adopted by the BCFD at the time of this incident.

Cyanokits have been successful in other jurisdictions. FDNY recently experienced a MAYDAY where the Cyanokit was a valuable tool. In May 2024, one firefighter battling a 2-alarm fire was exposed to smoke (Firehouse 2024). He experienced difficult breathing, then collapsed unconscious. A MAYDAY was called for him and after he was pulled from the structure, medical treatment included Cyanokit administration. He was awake and alert later that day at the medical facility and expected to make a full recovery (Firehouse 2024).

The FDNY incident was not the same as this incident. Captain Rinaldo and EMT/FF Pitts were not only exposed to smoke. They were also exposed to extreme heat that led to severe thermal burns. Cyanokits may have been a helpful tool, but they would not have guaranteed a change in the outcome of either member.

In March 2024 the BCFD announced they were implementing the Maryland Optional Supplemental Protocol- Cyanide Poisoning and distributing Cyanokits to all seven (7) Battalion Chief vehicles, with BCEMS carrying two (2) kits (BCFD DO 31-24). This ensures that there will be two (2) kits on every fireground.

In February 2025 the use of the Cyanokit was suspended due to a manufacturing defect (BCFD DO 17-25). The kits were collected when the announcement to discontinue use was made.

In November 2025 the manufacturing and backorder issues were resolved. The Cyanokits returned to suppression Battalion Chiefs, ASU1, and BCEMS (BCFD Bulletin Date November 6, 2025).

RECOMMENDATION:

1. Continue the Optional Maryland Medical Protocol for Cyanokits for the BCFD.

REFERENCES:

- Maryland Institute for Emergency Medical Services (MIEMSS). (2024) *Maryland Medical Protocol for Emergency Medical Services*. released July 1, 2024. Page 350.
- Firehouse.com. (2024) FDNY Firefighter Revived with "Miracle Drug". *Firehouse Magazine*. Accessed at https://www.firehouse.com/safety-health/video/55040949/fdny-firefighter-revived-with-miracle-drug
- BCFD Departmental Order 31-24: CYANOKIT- Cyanide Poisoning Treatment. Released March 25, 2024.
- BCFD Departmental Order 17-25: CYANOKIT- Administration Suspension. Released February 21, 2025.
- BCFD Bulletin dated November 6, 2025- CYANOKIT- Cyanide Poisoning Treatment- Redistribution

CAUSAL FACTOR: EQUIPMENT #13 – THERMAL GLOVES

Summary: Both Captain Rinaldo and EMT/FF Pitts had significant failure and damage to their structural firefighting gloves during firefighting operations at 5210 Linden Heights.

FACTS:

The only gloves authorized for use by the BCFD, are those issued by Logistics. Currently, Logistics issues the Dragon Fire Alpha X glove. During a post-incident, third-party gear review of all members that sustained burn injuries at Linden Heights, it was noted that significant damage occurred to both members' gloves. Several other members' gloves were found to have different circumferential sizing due to shrinkage under heat.

The standard for firefighting gloves can be found in NFPA 1971, Standard on Protective Ensembles for Structural Firefighting and Proximity Firefighting. Among a host of standards, NFPA 1971 specifically covers allowed shrinking for gloves during operations. It states that the gloves must meet a minimum Thermal Protection Performance of 30, with the interface component (wristlet) having a minimum TPP of 20, and shall not melt, separate or ignite, nor shall it shrink more than 8% in length or width (NFPA Standard 1971, 2023).

During interviews with the medics and doctors who treated both Captain Rinaldo and EMT/FF Pitts, both members had sustained significant burns to both hands. It is assumed that the left glove of EMT/FF Pitts came off during his attempt at self-extrication, leaving one hand directly exposed to the elements. However, his right glove remained intact for the duration of the incident and transport. Medics on-scene reported not being able to remove his right glove due to both the shrinking and not having the appropriate shears to cut through the thick material. Additionally, the glove can be seen to have obvious shrinking, melting on the outer material, and separation.

Both of Captain Rinaldo's gloves remained intact to his hands for the duration of the incident. Once he was removed and attended to, his left glove shrunk to the point that medic crews could not remove it. The glove was finally able to be removed at the hospital, by staff cutting the glove in half to remove it from around his hand. *(Equipment photo #12)*. Additionally, the glove can be seen to have obvious shrinking, melting on the outer material, and separation.

Equipment Photo # 12

Capt. Rinaldo's left turnout glove with cut placed by hospital staff to remove it

While we can say that the crews operated within an extreme environment on Linden Heights, we found during interviews that other members experienced shrinking in their gloves. During interviews with Departmental members, several personnel mentioned that their gloves were unequal sizes and had noted that one or both gloves had shrunk while wearing them during both training academy burns and live fires.

RECOMMENDATION:

1. Utilizing an internal Research and **Development** team (*See also Equipment #9)*, the BCFD should conduct a wear test evaluation of several different manufacturers' gloves to determine which glove is best suited for the Department.

PREVIOUS REPORT(S):

- Glover Street

CAUSAL FACTOR: EQUIPMENT #14 – MERCEDES KRACKEN-EXO FIRE HOSE

Summary: The Mercedes Kraken-EXO fire attack hose supplied on the Fire Department's apparatus held up to the harshest of conditions during the initial fire fight attempt.

FACTS:

During the interviews with the members from Engine 29 (PO and Leadoff positions), it is believed that the 1 ¾" Mercedes Kracken-EXO attack hose was never opened to flow water and was exposed to flashover conditions (300°F at floor level - 1000°F at ceiling level) in a static state while inside the dwelling. The first 3 sections of fire hose comprising of the 5-side were collected at the scene along with the Elkhart Chief XD fixed gallonage tip (185 GPM/75 psi) and Elkhart Chief XD shutoff with 15/16" integral smooth bore shutoff bail. The Elkhart Chief tip was marked in 2 locations to replicate the exact setting and stream pattern as the day of the incident for testing purposes. The hose itself during inspection and testing on November 29th, 2023, found to have 2 locations of the pipes' section of 50' hose that the outer jacket/liner of the Mercedes Kracken-EXO fire hose had burned completely through and peeled backwards on itself exposing the inner liner. Those 2 locations of outer liner deterioration were the 10' section where the hose connects to the pipe and the middle portion of the 50' section of hose. The purpose of the testing was to conclude if the Mercedes Kracken-EXO attack hose would still operate at normal conditions even with the outer liner deteriorated like it was. The attack line was pumped at normal pressure for the of Mercedes Kracken-EXO attack hose at 120 psi.

The test concluded that the 3 tested sections, including the damaged section of the 1 ¾" Mercedes Kracken-EXO attack hose, operated at normal conditions without failure or rupturing even with the outer jacket of the hose liner completely burned away in 2 locations.

Handline Testing Video

RECOMMENDATION(S):

1. Ensure that the BCFD continues its commitment towards supplying apparatus with the most technologically superior fire suppression equipment.
2. The Research and Development team shall be involved in the testing and recommendation process should fire hose and manufacturer be replaced.

APPENDIX A: *Communications*

RADIO TRANSCRIPTION LOG

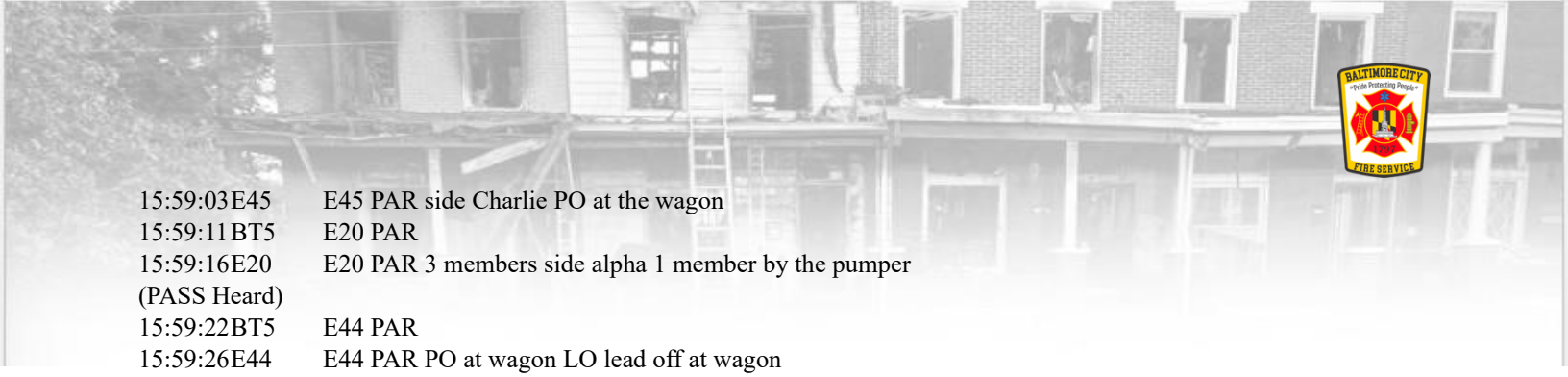
Transcription - 5210 Linden Heights Av BOX 46-40

15:41:35	SQ40	SQ40 to BC5 we at Rogers and Liberty Heights you want us on that BOX?
15:42:05	SQ40	SQ40 to BC5 we at Rogers and Belle you want us on that BOX?
15:42:28	E46	E46 at Reisterstown and Druid Park Dr can you put me on that 46 BOX?
15:42:36	BC5	BC5 to unit calling what's your message?
15:42:43	E46	E46 at Reisterstown and Druid Park Dr can you put me on that BOX
15:42:52	BC5	E46 that's affirmative take the BOX
15:42:56	SQ40	SQ40 to BC5 I'm at Rogers and Wabash can I take the BOX?
15:43:04	BC5	What was the unit?
15:43:07	SQ40	SQ40
15:43:11	BC5	That's affirmative take the BOX
15:43:18	FCB	Units responding on BOX alarm 46-40 also receiving 5208 Reisterstown
15:43:38	BC5	BC5 I copy
15:43:41	BC5	there is large plume of smoke in that area
15:43:49	SO3-P	SO4 I'm enroute
15:44:09	E29	E29 HYD Belvedere/ Liberty Heights
15:44:17	BC5	46 and 52 just fall in on the BOX where belong alright
15:44:24	BC5	cover plugs if necessary
15:44:44	SQ40	SQ40 I'm cover 29
15:44:49	E29	E29 2 STY MOG fire showing from the rear you can make me command
15:44:XX		FCB Repeats, but calls E29 S40
15:45:14	BC5	BC5 on the scene I'll give you an update in a minute you can go ahead and make This a working fire. Units are gonna stage at Belvedere and Linden Heights
15:45:24	FCB	BC5 message received working Fire staging Belvedere and Linden Heights
15:45:XX		FCB Repeats
15:45:54	CAR5	CAR enroute
15:46:05	E52	52 I'm on scene RIT
15:46:36	FCB	AF1 enroute 1546
15:47:03	SQ40	40 P2 to 29 P2 how's your pressure?
15:47:10	BC5	BC5 command post alpha side 2sty porch front second from EOG we got heavy fire In the rear with extension , corrected address is going to be 5210 Linden Heights
15:47:37	E45	E45 HYD St Charles and Belvedere
15:47:51	T12	T12 to command just cleared a medic run we are on Garrison, request to take the box
15:47:57	BC5	Go head take and when you arrive I need you to get into 5212
15:48:03	T12	12 I copy going to 5212
15:48:06	BC5	If you don't arrive here first right now I don't have a truck on the scene
15:48:13	E44	44 I'm covering 45's plug
15:48:19	SQ40	40 communications start police Belvedere all lanes heavy traffic
15:48:26	FCB	Command copy police notified
15:48:35	BC5	command to 29 you reach the back of that dwelling yet?
15:48:44	BC5	46 I want you to start(stop) knocking down that exterior fire stop it from walking the block
15:48:48	E46	copy

15:48:53SQ40 SQ40 charge my line 29
15:48:59BC5 46 29 is in the 2nd from the end I want you to stop it at the 3rd from the end
15:49:07E46 copy 46 charge my line
15:49:13T25 T25 command we have no access to the front
15:49:18 **E29*P1/FCB LO1 E46 MAYDAY MAYDAY MAYDAY**
15:49:23 BC5 command to all units a MAYDAY has been declared – unit calling the MAYDAY go ahead
15:49:28E52 46 you need the line charged!!!
15:49:35 **E29*P1/FCB LO1 E29 MAYDAY MAYDAY MAYDAY first floor**
15:49:39 **BC5 Command to the MAYDAY give your location**
15:49:45 **SQ40-P4/FCB*L …Waters coming**
15:49:52 **E29*P1/FCB LO1 29 I can't get out**
15:49:56 **E29*P1/FCB LO1 keyed up .03 seconds no voice**
15:50:00 **BC5** command to communications I need you to dispatch a RIT TASK Force a MAYDAY has been declared ... command to all unit's emergency traffic only on the radio
15:50:14FCB MAYDAY transmission given from FCB "E29 P1 1st floor"
15:50:23 BC5 command to 29 I need you to give me a report on your location
15:50:42BC5 command to BC3 Charlie division I need you to get 46 and start dumping It in from the rear
15:50:50BC3 BC3 copies we heavy fire on 3 dwellings we starting to put water on it now do you have the location of the MAYDAY?
15:51:04BC5 Command to communications I need a second alarm
15:51:08FCB Communications copies
15:51:08 BC5 command to 29 I need a report
15:51:12 **SQ40-P3 SQ40 MAYDAY MAYDAY at the front of door we need a saw to get bars off the windows bars off the window MAYDAY**
15:51:21 BC5 OK 29 can you get out of the dwelling are all your people accounted for? E46- X 46 more pressure on line
15:51:37 E29-P3 **X on the transmission did not record .02 seconds long**
15:51:40BC3 Charlie division we only have 1 line in the back we are going to need at least two more
15:51:49BC5 Ok Charlie division I got units coming on the second alarm just start grabbing them and using them as you can get them back there
15:51:56BC3 OK copy that
15:52:00BC3 do you have a location for the members on the MAYDAY?
15:52:04 **E29*P1/FCB LO1 keyed up .03 seconds no voice**
15:52:08BC5 they reporting 1st floor we trying to knock the fire on the 1st floor now
15:52:14T12-P1 T12 I got the bars off the window I got members down (just) inside
15:52:23T12-P1 get me.. manpower ..get them out here sir
15:52:28BC5 command to 29 I need a report from you immediately on your PAR
15:52:34SQ40P1 SQ40 to command got 1 member on the porch need a medic
15:52:40BC5 Ok I copy, command to the medic unit report to the front
15:52:47M11 M11 we're enroute where do you want us on Belvedere?
15:52:56BC5 unit calling repeat your message
15:53:00M11 M11 we are still enroute to the scene, you want us on Belvedere on Linden?
15:53:08E44 44 to 20 charge it when you can
15:53:12BC5 command to anybody that can account for 29's members I need you to account for them.
15:53:21SQ40P1 have member from 29 side alpha
15:53:27E44 E44 in the rear, 20 charge the line
15:53:32E46 E46 mobile to 44 mobile charge that hydrant
15:53:39BC5 command to all units responding I want you to focus your attention on the exposures

15:53:48E46-P1 46 to mobile more pressure
15:53:52E46-P1 46 mobile stand by waiting for hydrant to be charged we almost out of water
15:53:58BC5 command to 52 you are going to be the rescue grp supervisor, I need a report on any Members from 29 that you remove from the building
15:54:07T12-P1 T12 to command I'm with the down member just inside the front door I need engine Companies to keep flowing water we are trying to extricate him now
15:54:20BC5 OK can you account for both the pipe man and the officer?
15:54:27E44 44 to 20 mobile charge the line
15:54:32E45 E45 PO charge our line charge it
15:54:38E45 charge that alley lay
15:54:41E44 46 charge your 5 side
15:54:45CAR5 CAR5 to command place the suppression units on another channel
15:54:52SQ40-P1 SQ40 to command both members accounted for
15:54:58BC5 command to SQ40 you are coming in gurgled, I need a report
15:55:03SQ40-P1 SQ40 to command, both members from 29 Engine accounted for
15:55:10BC5 you got both members of E29?
15:55:14SQ40-P1 That's affirmative
15:55:20BC5 command to all units, we are going to remain on this channel I need a PAR, I need a accountability report Battalion Tech 5 is going to do a PAR
15:55:34BC5 command to communications, I need 2 additional medic units I need them to report to the front
15:55:39FCB command two additional medics 1555
15:55:44BC3 BC3 tech come to the rear of the building
15;55:52E46 E46 you have zero water, we need water
15:55:57E46-P2 46 mobile I'm working on it, nobody's charged the plug so I gotta run down there and charge it
15:56XX E45-P1 E45 1 to E45 moblike charge that alley line
15:56:05E45-P3 2 **key ups no voice**

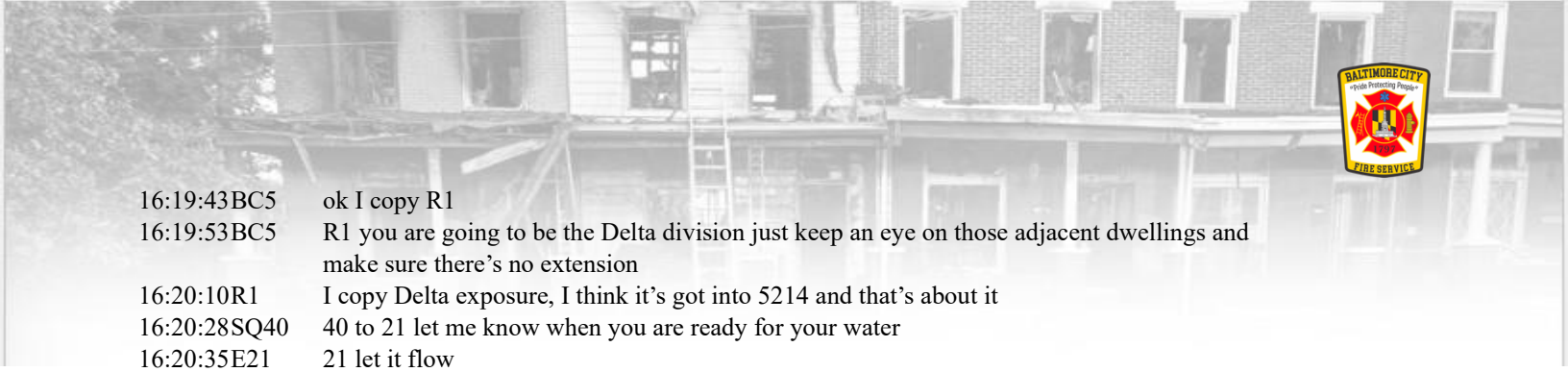
15:56:18E45 45 engine P4 to P2 you want water?
15:56:23BC5 command to T12 I'm going to make you the rescue grp supervisor, I need a report on rather We got all the members of E29
15:56:32BC3 E46 charge every line you got coming off your wagon E45 charge your lines
15:56:41 T12 Rescue to command, myself the officer T16 have a line. We're making entry alpha side thorough the front door, have companies in the rear dump all the water they got We're encountering high heat at the front door, still trying to get a good search
15:57:03BC5 Ok I copy are we still missing someone from E29?
15:57:09T12 I don't know. No ones given me a straight answer on that yet
15:57:15BC3 Charlie division to the 1st engine on the second alarm I need you to find a hydrant come to the side Charlie with your 2 ½' and your mini blitz
15:57:30BC5 command to all units emergency radio traffic only. I have accounted for all 4 members of E29 I need to do a PAR for the rest of the fire ground. Communications make the announcement we are going to do a PAR
15:57:44FCB Command Copy
15:57 XX CAR5 Car 5 on scene
15:57 XX FCB Announcement made
15:58:02E20 E20 to E29 I'm covering your Hydrant
15:58:10BT5 Tech5 to E46 PAR
15:58:23BT5 BTECH5 to E46 PAR
15:58:35E46 E46 PAR 3 members in the rear one at pumper
15:58:40BT5 SQ40 PAR
15:58:45E8 8 mobile add 2 sections
15:58:51SQ40 SQ40 PAR 3 members side A 1 at wagon
15:58:59BT5 E45 PAR



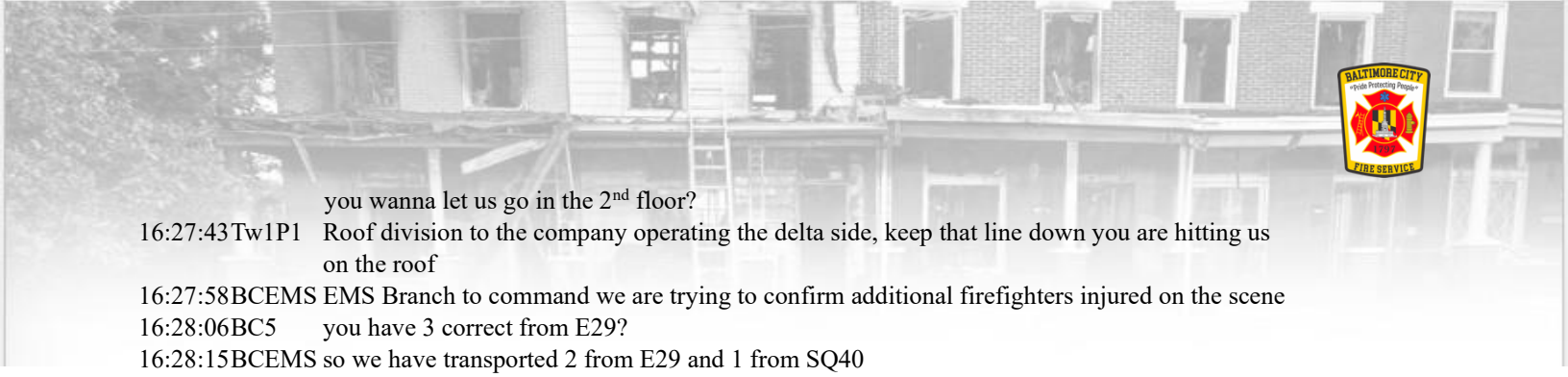
15:59:03 E45 E45 PAR side Charlie PO at the wagon
15:59:11 BT5 E20 PAR
15:59:16 E20 E20 PAR 3 members side alpha 1 member by the pumper
(PASS Heard)
15:59:22 BT5 E44 PAR
15:59:26 E44 E44 PAR PO at wagon LO lead off at wagon
15:59:31 BT5 T25 PAR
15:59:36 E8 8 hold off on just the one section and charge it
15:59:41 T25 T25 PAR side alpha
15:59:46 BT5 T16 PAR
15:59:52 T16 T16 P1 in doorway side alpha, have a member by the truck in the rear p3 and p4 I don't have them yet
16:00:06 BT5 T12 PAR
16:00:10 T12P1 T12 P1 I'm on the front porch you are going to have to call P 2, 3 and 4 and get their locations
16:00:20 BC5P5*L "T12 P2 I'm in the Charlie side delta
16:00:33 BT5 T12 P3 4 PAR
16:00:51 T12 T12 P1 I can see P4 he is in the front street, call P3 he's a member from E46
16:01:06 BT5 Copy
16:01:09 BC3 Charlie division we need BGE emergency response we have multiple wires arcing back here
16:01:17 BC5 command copy that, communications give me BGE, T12-P3 I need a report from you
16:01:32 BC5 command to communications PAR been conducted 1st alarm units, all units are PAR
16:01:39 FCB BC5 message received all units PAR 1601
16:01:47 T12P1 T12 to command still could use a second line alpha side front porch original fire building
16:02:09 BC3 Charlie division we have 4 hose lines in service, we are starting to get ahead of it now have all units stay 3rd from the end that's going collapse we already had a partial collapse on the second one on the end on the rear
16:02:26 BC5 ok I copy Charlie division the seconds going to be the original fire building the third going to be the bravo exposure correction delta exposure. command to all units operating the delta exposure evacuate the building
16:02:50 EMS5 EMS……
16:02:51 FCB TONE#2 – communications all units Box alarm 46-40 operating on the delta exposure Evacuate the building
16:03:13 BC5 command E8 E30 I need you to report to the front you are going to be the RIT team
16:03:20 BC3 Charlie division to E8 they lead off there my main water source on the Charlie side
16:03:34 T12P1 rescue to command confirming the PAR and all members accounted for from E29 and E46
16:03:54 EMS5 EMS5 to command I'm going to commit myself to M11
16:04:00 BC5 command to Charlie division you got a truck back there yet?
16:04:07 BC3 that's affirmative I have 16 and 12 back here
16:04:12 BC5 ok I copy
16:04:14 BC5 command to T12 P1 you are relieved of your rescue group supervisor duties, I need a report Of Where you're at and what you're doing
16:04:25 T12P1 T12 to command myself, P4, and T16-P1 are on the front porch side alpha original fire building flowing water in from the outside
16:04:41 BC5 ok I copy
16:04:44 CAR5 CAR5 to command we need BGE ELE side emergency response in the rear
16:04:52 BC5 Ok I copy I already made the request
16:04 XX FCB Comms to command
16:04:56 T10P1 T10 P2 to P1 what's your location?
16:05:05 BC3 Charlie division to 46 add another section to the 5 side
16:05 XX OEM2 OEM 2 On scene
16:05:19 E46P1 key up 3 seconds no voice
16:05:23 BC2 BC2 is on the scene

16:05:30 SO4 SO4 is on the scene assuming safety
16:05:37 OEM2 OEM2 is on the scene
16:05:40 BCM3 Baltimore County Medic 3 is enroute
16:05:49 T10P1 T10 P2 what's your location?
16:05:55 BC5P5*L "heading back into 5218 to open up"
16:06:01 T10P1 copy
16:06:17 BC5 ok I copy
16:06;23 BC3 Charlie to E8 see if we can get a 2 1/2 down the alley and bring back your portable monitor, I still want to put it in an exposure Delta 1
16:06:39 CAR5 CAR5 to command let's get some portable monitors to the rear
16:06:47 E8 8 I copy if I got a company covering my plug, they can get the 2 ½ for you
16:06:58 E46 46 mobile to 44 P1 did you say add a section?
16:07:06 E31-P1 SO3 I'm on the scene
16:07:13 E44 44 to 46 go ahead and shut my line down and add 1 or 2 sections
16:07:21 E46 copy shutting it down
16:07:25 E43 43s covering the hydrant whoever is at Liberty Heights and Belvedere
16:07:31 T16P1 T16 P1 to P3 and 4 what's your location?
16:07:43 E45 E45 urgent the side Charlie their dropped these electric wires down on the fence's members Reframe from touching any fencing or metal
16:08:02 T5 T5 to command, 5214 is stable vacant we do need a line inside on the second floor
16:08:10 BC5 ok I copy
16:08:13 BC5 command to Charlie you got anybody you can send into the Delta 1 with a line from the rear?
16:08:24 T10 T10 to command we have a line Delta 1…we were able to knock down the 1st floor looks like everything might be on the second……structurally sound at the moment
16:08:44 BC3 Charlie division to all members operating on the roof, do not step on any of these exposures that have been on fire, they all are in really bad shape
16:09:00 T16P3 T16 P3 I'm with T5 in the Delta 1
16:09:21 BCEMS BCEMS I'm on scene assuming EMS branch, M11 just went enroute to 634 / P1 firefighter
16:09:33 BC5 command I copy EMS branch
16:09:36 BC5 if you need to grab another channel
16:09:40 BCEMS copy, command do we have 1 additional patient?
16:09:49 BC5 right now we had the 2, there's a 3rd member of 29 engine I want to get checked out
16:09:57 BCEMS copy
16:10:00 BC5 you can go ahead and set up the resources for rehab
16:10:07 BCEMS copy I'll advise
16:10:33 T25 T25 roof, we got everything from the 3rd and 4th up from the main fire building opened, Didn't know if we could get a line up here
16:10:47 AF2 I need a medic on the fire ground to report to AF2 sick firefighter
16:11:05 E46 46 mobile to 44 P1, you ready for water two lines have been added
16:11:11 E44P1 go ahead
16:11:20 E8 8 mobile to 8-1 you guys ready for that blitz line I mean monitor to be charged?
16:11:26 E44 44 to 8-1 go ahead we'll charge the monitor
16:11:33 BC5 command to all units we going to put the deck gun from 29 in the front window of the original building so if you are operating hose lines you might lose pressure
16:11:50 SOC2 SOC2 on scene
16:12:08 BC5 command to Charlie how you look back there
16:12:13 BC3 Charlie to command conditions have greatly improved we got most of the visible fire knocked we still have heavy smoke from the EOG and the one next to it, we have portable monitor in service and 5 hand lines
16:12:28 BC5 Ok I copy we still have fire EOG and the original fire building we going to put a portable. Mobile monitor in service out front here
16:12:38 BC5 command to 2nd Battalion you are going to be Bravo division
16:12:43 BC2 I copy
16:12:50 T16P1 T16-P1 to P2 what's your location?

16:13:02T16P1 T16 to roof, you got T16 P2 up there?
16:13:08T16P2 T16-P2 I'm inside 5216
16:13:14T16P1 copy you got AJ with you?
16:13:18T16P2 negative I have P4
16:13:23T16P3 P3 I'm …. (unreadable)
16:13:29T16P1 copy
16:13:34R1 R1 to command 5216 didn't have any extension just some trapped smoke, gonna head into 5214 hook the ceilings on the 2nd floor
16:13:46BC5 I copy…5 2 1 6 is what you are reporting, check the 3rd floor check the Bravo wall party-wall, looks like a fire wall, looks like threes extension into the roof area, just go up in and open make sure we didn't get nothing in...
16:14:06R1 I copy
16:14:09BM3 Baltimore County PM 3 has arrived
16:14;19BC3 Charlie E21, come down here I want you to get a 2 ½ off of E45 drag around to the Charlie side and place the portable monitor in service
16:15:31CAR5 CAR5 to command, need somebody in 5216 looks like it might be extending along the roof line need some lines and some hooks
16:15:46BC5 Ok I copy, we are going to take one of these lines from the front, R1 is inside 5216, they said It was clear but I agree looks like its extending
16:15:58BC3 Charlie I got about 5 truck guys going in there, is that the 5th house from the end?
16:16:07BC5 command to Charlie, that's. (cuts off)
16:16:12R1 R1 to command is that the alpha side or Charlie side you think its extending??
16:16:21BC5 command to R1 what you record again??
16:16:27R1 16 has a light smoke condition right now do you think its extending alpha or Charlie?
16:16:35BC5 Its on that delta wall in the roof area if its anywhere
16:16:42R1 I copy, we aren't seeing anything at this time
16:16:47BC5 command to the roof, can you give me a report?
16:16:57E20 20 to 29 how's your pressure, I can pump you if need me
16:17:02E29P2 good right now
16:17:08T25 T25 roof to command everything is opened up, up until 2018 and we have a line Up here, in service
16:17:21BC5 ok, I copy…rolling pretty good in 5214 which would be the 4th dwelling in, you just make sure, there's no extension through the top wall spacing
16:17:37T16P2 T16 P2 to command, I am in 5216 that would be exposure Delta 1, we're opened up and got nothing
16:17:51BC5 ok I copy
16:17:54E45 E45 Charlie division, E21 already has the blitz with the ram gun in the rear already with no Water, we are going to relay water into them, is that ok?
16:18:14BC5 command to 45 repeat your message
16:18:18E45 E21 already has a 2 ½...a blitz line layed with a monitor pipe in the rear but they don't have water, we are going to relay water to them, is that ok?
16:18:33BC5 affirmative, go ahead and do that
16:18:38E45 OK
16:18:50BC2 Bravo to command, we still have smoke showing on the Bravo side up along the roof line and smoke pushing through the mortar joints in the brick row on the top..several rows on the top are starting to deteriorate
16:19:06BC5 Ok I copy Bravo
16:19:14BC3 Charlie division T16 reports there's no extension into that 5th dwelling, their pulling some ceilings just to double check
16:19:27BC5 Ok I copy
16:19:29R1 R1 to command, we got the ceiling pulled in 5216 right along the party wall between 5214 And 5216, we don't have any extension in here just trapped smoke



16:19:43BC5	ok I copy R1
16:19:53BC5	R1 you are going to be the Delta division just keep an eye on those adjacent dwellings and make sure there's no extension
16:20:10R1	I copy Delta exposure, I think it's got into 5214 and that's about it
16:20:28SQ40	40 to 21 let me know when you are ready for your water
16:20:35E21	21 let it flow
16:21:30BC5	command to communications and all units operating on the fire ground, we are going to conduct a 2nd PAR
16:21:44BC5	this will include units on the 2nd alarm and the RIT task force
16:21:54BT5	TECH5 E46 PAR
16:22:03T16P1	T16 to P3 come out to side Charlie
16:22:09BT5	52 PAR
16:22:26BT5	TECH5 to 52 PAR
16:22:49SQ40	SQ40 PAR 1 member at M4 , 2 members at the wagon..excuse me..3 members at the wagon
16:23:03BT5	45 PAR
16:23:07E45	45 2 inside Charlie, 2 at the pumper
16:23:14BT5	E20 PAR
16:23:23E20	E20 PAR, 3 members side Alpha, 1 member at the pumper
16:23:30BT5	T12 PAR
16:23:33T12	T12 PAR all members at the apparatus Bravo side
16:23:42BT5	T16 PAR
16:23:45T16	T16 PAR side Charlie all 4 members
16:23:50BT5	R1 PAR
16:23:55R1	R1 1 member 5214, other 3 members out on the front 5212 and 5214
16:24:05BT5	E44 PAR
16:24:16E44	44 PAR P2 at the pumper
16:24:21BT5	T25 PAR
16:24:27T25	T25 PAR Roof
16:24:36BT5	E13 PAR
16:24:21E13	E13 PAR, 1 member at the wagon, 3 in delta 1
16:24:51BT5	E8 PAR
16:24:55E8	E8 PAR, 3 members side Charlie bravo exposure, 1 at the pump panel
16:25:03BT5	E30 PAR
16:25:06E46	E46 PAR 1 member at the pumper
16:25:10E30	E30 PAR side alpha
16:25:15BT5	T8 PAR
16:25:18T8	T8 PAR side Charlie
16:25:28BT5	T1 PAR
16:25:31	TW1P1 T1 PAR all 4 members roof division
16:25:37BT5	T5 PAR
16:25:41T5	T5 all 4 members PAR side alpha delta Delta 1 exposure
16:26:04BC3	Charlie division command I just made face to face with BGE they are going to shut down half this block
16:26:12BC5	command I'm direct
16:26:14BT5	E4 PAR
16:26:17E4	E4 PAR side Bravo 4 members
16:26:22BT5	43 PAR
16:26:25E43	E43 PAR 3 members side Alpha 1 at the pumper
16:26:40BT5	TECH5 to command PAR is completed all units accounted for
16:26:46BC5	copy, E29 I got three that were transported to the hospital, I got the PO right here Command update: we had fire originally in 5210 extension into 5208 5212 5214, it looks like there's we stopped at we still have numerous hot spots through-out, we still working on fire
16:27:25R1	Delta to command, in the delta exposure 5212, E13 has a hand line on the front porch roof, there's a lot of fire burning towards the middle of the building, you got anybody in the rear

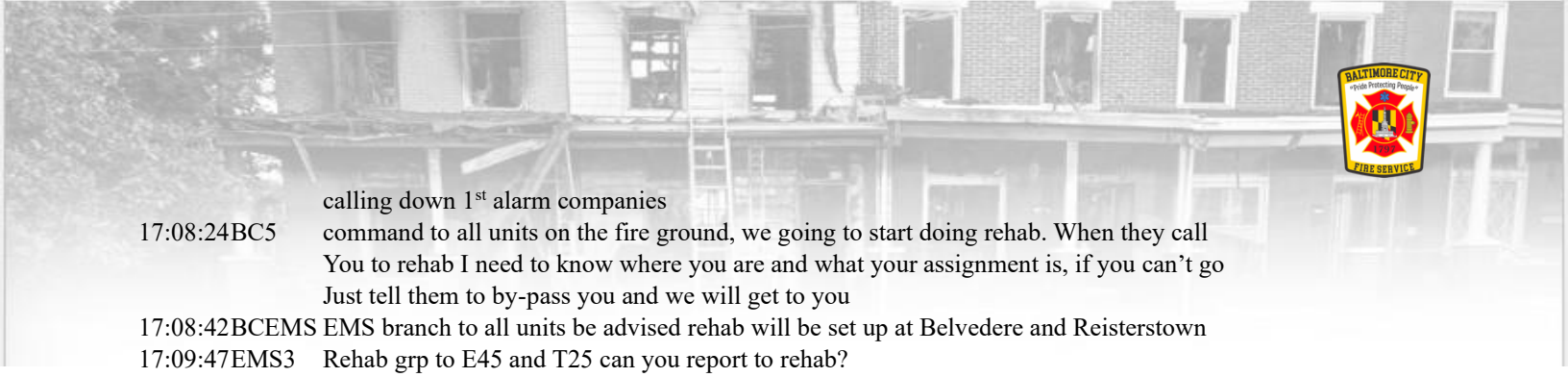


you wanna let us go in the 2nd floor?
16:27:43 Tw1P1 Roof division to the company operating the delta side, keep that line down you are hitting us on the roof
16:27:58 BCEMS EMS Branch to command we are trying to confirm additional firefighters injured on the scene
16:28:06 BC5 you have 3 correct from E29?
16:28:15 BCEMS so we have transported 2 from E29 and 1 from SQ40
16:28:46 R1 Delta to command
16:28:54 BC5 command go ahead
16:28:57 R1 the Delta exposure 5212 we got some burning on the 2nd floor towards the middle of the Building unless you got somebody in the back or if you wanna let us go in the 2nd floor window off the porch we can get a knock on it
16:29:11 BC5 Just knock it from the exterior if you can, they got lines operating in the rear, Command Charlie division the Delta exposure you got lines going in the rear of that water Anyway
16:29:25 T5 T5 to command we are breaching the wall into the Delta 1 to delta exposure now 2nd floor
16:29:38 BC5 Ok I copy, you have any fire conditions in the Delta 1?
16:29:42 R1 Delta to command there was fire conditions in delta 1 / 5214 all been extinguished couple hot spots, like T5 said we are going to poke a hole in this wall between 14 and 12 to try and get to that fire in the middle of the building
16:29:57 BC5 ok I copy
16:30:02 T10P1 T10 P2 come back to the alpha side please
16:30:21 TW1P1 roof division to command, 5212 its still burning pretty good underneath the roof, we are unable to get on the roof due to roof conditions
16:30:30 BC5 Ok I copy
16:30:32 R1 Delta to command we got the hole opened from 5214 to 5212 we got eyes on the fire we are getting ready to put water on it now with E13
16:30:42 BC5 OK I copy Delta, I copy you as well Roof
16:30:49 BC3 Charlie division all electric has been shut off from the pole
16:31:04 BC5 command to EMS branch
16:31:16 BC5 command to EMS branch
16:31:22 BC5 command to communications can you get EMS branch back over to FG1?
16:33:18 BCEMS BCEMS
16:33:22 FCB lateral with command
16:33:26 BCEMS copy I'll go do a face to face
16:33:39 BC5 command to roof division
16:33:42 TW1P1 go ahead
16:33:44 BC5 can you do a structural integrity test on all those roofs? I know you told me the delta was in bad shape, just make sure the other ones are safe to operate on
16:34:00 TW1P1 14 and 16 ok, we are on 14 now trying to make some holes in 12. 12 to the end is a no go.
16:34:13 BC5 command to roof division you copy?
16:34:18 TW1P1 I copy Chief did you copy my message?
16:34:21 BC5 You are saying 12 is the only one that's not safe to be on, correct?
16:34:25 TW1P1 12, 10 all the way down that way, 14 and 16 are ok but I'm limiting how many I'm putting on here
16:34:39 E31-P1 SO3 to BCEMS where's your location? E31-P1 is SO3
16:35:20 E31-P1 SO3 to BCEMS
16:35:25 BM3 County M3
16:35:34 E31-P1 what's you location?
16:35:34 BM3 In front of E46
16:35:52 E21 E21 P1 to mobile, if you got any more pressure, we will take it
16:36:13 E21P2 21 copies
16:36:15 BC5 command to Bravo exposure, how's fire conditions looking at the end of the group.

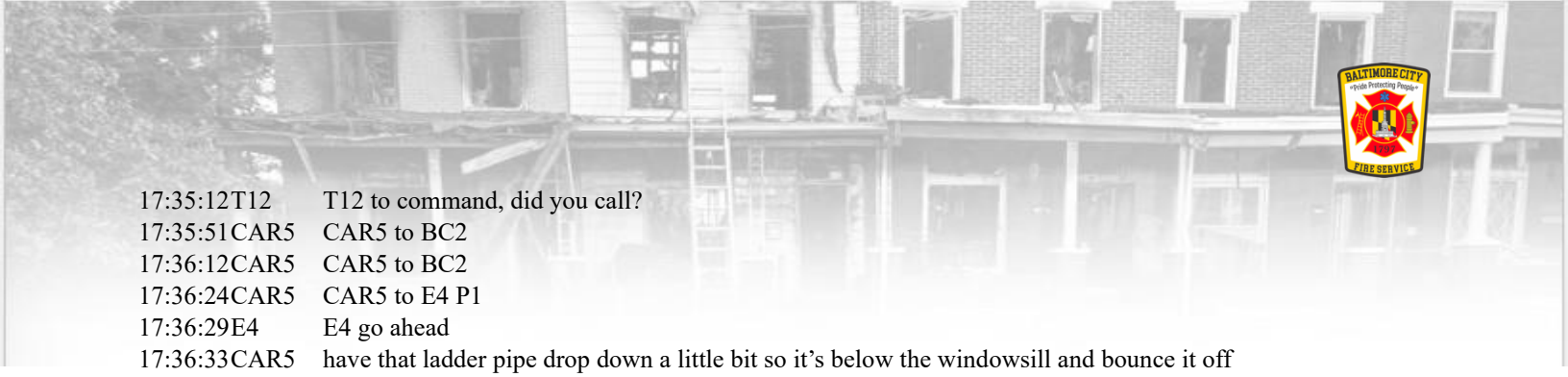
16:36:38BC5 command to Bravo division you copy?
16:39:43BC5 command to roof division, can you give me a report of who you have on the roof with you.
16:39:50TW1P1 I have T1, T25, looks like 1 member of T10 and 2 members of T16 up here.
16:39:59BC5 copy, command to Charlie division can you give me an update?
16:40:08BC3 in Bravo exposure you still got some fire rolling on the 2nd flr ceiling on the Charlie side middle room, on the original fire building we got all the fire knocked, visible fire, we're hitting some hot spots, on Delta exposure we're hitting some hot spots and Delta 1 looks at this time pretty good
16:40:33BC5 Ok I copy
16:40:51BC5 command to communications, I'm just confirming you made the announcement the MAYDAY was clear.
16:40:51FCB negative I'll make it now…communications to all units on BOX alarm 46-40 the MAYDAY has been cleared, the MAYDAY has been cleared.
16:41:51TW1P1 roof division to command, we 12 opened, 14 opened, looks like it stopped there, I'm going to hold up on any other ones.
16:42:01BC5 Ok I copy
16:42:07BC2 Bravo division, conditions are improved over here, we still do have fire in the roof line mainly the center of the building
16:42:22T16 T16 to command
16:42:59T16 T16 to command
16:43:15TW1P1 roof division T16 P1, I have P2 up here with me.
16:44:06BC5 command to communications
16:44:08FCB command
16:44:11BC5 I don't think you ever filled out my 2nd alarm, can you fill out the 2nd alarm so I can….reserve
16:44:20FCB command, copy 1644
16:44:46BC5 command to any unit operating a hose line that is not currently using it, can you report that to command, I need a line on the Bravo exposure be the ……(unreadable)
16:45:04BC5 command to Charlie, can you get a line down there to the Bravo exposure? Command to Charlie disregard
16:46:13FCB communications to command
16:46:21BC5 go ahead
16:46:23FCB your 2nd alarm units, T8 E30 T1 BC2 EMS5 PIO E43
16:46:39M17 M17 to command
16:46:58BCEMS EMS Branch to command, I'm requesting 1 additional medic unit, 1 additional EMS officer
16:47:05BC5 I copy, command fill that request for EMS branch and dispatch me 2 additional engines For stand by
16:47:17FCB command I couple, 2 additional engines stand by special call, 1 additional medic, 1 additional EMS officer.
16:47:30M17 M17 to dispatch, what channel is EMS branch on?
16:47:46BCEMS go ahead.
16:47:47FCB can you advise EMS branch channel?
16:47:56BCEMS do you have one established or you asking if I need one
16:48:01FCB If you need one, M17 is requesting.

16:48:05M17 No I was requesting to know if you had one.
16:48:11FCB M17 negative at this time
16:48:15M17 M17 I'm going to be transporting priority 2 to 701
16:48;22BCEMS EMS branch copies
16:49:21 E45 E45 P1 to E45 mobile see if you can give me about 10 more up on that alley line
16:49:32E45P2 affirmative
16:49:38FCB communications to command
16:49:44BC5 command go
16:49:45FCB command your additional Engines stand by E5 E36, you have EMS3 and A23 EMS division
16:49:58BC5 Ok I copy

16:51:21CAR5 CAR5 to roof command
16:51:26TWP1 roof division go ahead
16:51:28CAR5 have the members on the roof to stop throwing bricks
16:51:33TW1P1 copy
16:51:44E5 E5…..(cut off)
16:51:54BC6 E5 have your members report to the command post
16:52:07E5 “open MIC no voice”
16:52:20FCB E5 verify your response
16:52:35E36 E36 to command we’re about 2 minutes out did you say personnel to the command post?
16:52:45BC6 That’s correct E5 E36 have your members report to the command post to stand by
16:52:54E36 copy that
16:53:08BC3 Charlie division to roof division, which member up there without his head gear, put his helmet on.
16:53:19TW1P1 I got him
16:53:45E43P4 ‘open mic for .08 seconds.. no voice”
16:54:38BCEMS EMS branch to communications can you advise on all my additional medic units?
16:54:47FCB EMS division you A23 and EMS3 on the last call
16:55:06BCEMS copy that if you can have those units to report to Park Heights, ..M18
16:55:15FCB communications to A23 EMS3, you copy
16:55:21A23 A23 copies Park Heights and Belvedere
16:55:26EMS3 EMS3 direct
16:56:33BC5 I want you to start calling 1 at a time to rehab
16:56:42BCEMS copy that, my rehab unit is inbound, as soon as they get set up I’ll start pulling them through
16:56:56BC5 command update. We are still working on hot spots, in the 4 dwellings I previously said that had the original fire building plus the extensions to the Bravo, the Delta and Delta 1, units are still working from the exterior and trying to chase hot spots
16:58:48T23 “unrecorded message .02 seconds from T23” X recording
16:59:07T10P1 T10 P2 when you have a minute come to the truck
16:59:16T10P2 T10 P2 copies
16:59:38T25P1 T25 P3 P4 come on down
16:59:48T25P4 copy we’re just gathering up some gear and coming down boss
16:59:58TW1P1 roof division to command I’m sending T25, a member from T16, a member from T10 Down, I’m gonna keep myself and T5s crew up here
17:02:08TW1P1 Roof division to engine company on the Bravo side, lower your line, you are over Shooting the building and hitting us
17:02:17BC2 we are going as fast as we can, we gotta hit the roof line
17:02:23TW1P1 we gotta a line up here for that
17:02:31BC2 you hit that chimney from Delta side? Bravo division to the roof
17:03:03TW1P1 that’s correct we are pushing water on the..embers…burned through the roof… Trying to keep it down
17:03:12BC2 OK we keep it down and move out of the way if you can hit it from up there…(distorted)
17:03:19TW1P1 we actually got a shot at it right now, we are putting water on it
17:03:45BCEMS EMS branch to A23
17:04:21E44 44 to 45 mobile you got any more pressure for that alley line?
17:04:37E45 I’ll look at it
17:04:46E45P1 E45 P1 to E45 mobile, shut that alley line down, we gonna reconfigure some hose, I’ll let you know when to charge it back.
17:04:58E45 45 copies
17:05:31E36 E36 command we are going to grab a hydrant at 5116 Reisterstown, and get water to the rear where T12 is, if you wanna have 5 engine come here and pump the plug it’s only a 6”
17:07:05E45 E45 P1 to E45 mobile go ahead and charge that alley line back up
17:08:06BCEMS EMS branch to command, you can make EMS3 rehab group he is going to start



calling down 1st alarm companies
17:08:24 BC5 command to all units on the fire ground, we going to start doing rehab. When they call You to rehab I need to know where you are and what your assignment is, if you can't go Just tell them to by-pass you and we will get to you
17:08:42 BCEMS EMS branch to all units be advised rehab will be set up at Belvedere and Reisterstown
17:09:47 EMS3 Rehab grp to E45 and T25 can you report to rehab?
17:10:13 E45 E45 Chalie division
17:10:24 EMS3 Rehab to E45 are you committed?
17:10:29 E36 36 to P4 go ahead and charge it
17:10:45 EMS3 E52 can you report to Rehab?
17:10:55 E52 E52 side alpha we are on the porch roof
17:11:07 EMS3 E52 you are committed, correct?
17:11:11 E52 correct
17:11:23 EMS3 Rehab to E20 are you able to report to rehab?
17:11:23 E20 20 affirmative
17:12:15 E36 E36 P1 to mobile you can charge that 400 whenever you want
17:13:22 TW1P1 Roof division to T12 2 put your gloves on
17:13:50 BC5 command to OEM
17:19:56 EMS3 Rehab grp to E44 are you able to report to rehab?
17:20:03 E44 stand by I'll check if crews are going to relieve the other line (?)
17:20:08 EMS3 Rehab to T16 are you able to report to rehab?
17:21:09 TW1P1 roof division to command…
17:21:15 BC5 roof division go ahead
17:21:18 TW1P1 I'm not sure what the number is, it's through the roof in the middle, best access to put some water on it is taking a line up T12's tip raise it up over it.
17:21:30 BC5 Ok I copy
17:21:38 T12 No we haven't set up the ladder pipe yet, I have member at the stick of the ladder working the roof trying to get it open a little more
17:21:47 BC5 command to the members operating on the original fire building porch roof you got to many people up there, get off the roof
17:22:02 BC5 command to 36, I want 2 of your members up there and everyone else can get off
17:22:11 E36 copy
17:22:22 BC2 Bravo division to command, we are going to stretch a hand line up T12's ladder, it's about all we can do right now.
17:22:31 Bc5 Ok I copy, command to 36 just get everybody off those porch roofs, if you want you can operate a line from that ladder but I want you off the porch roof
17:22:47 E36 copy
17:22:49 BC3 Charlie division to all members operating on the Charlie side, if you have not done so and you are not actively operating a hand line, change your bottle out
17:23:00 BC5 command to T16 off the roof
17:23:28 SO3 safety to T16 get off the roof
17:23:41 BC5 command to T12 let me know when you get that line up there and what kind of progress you are making
17:24:31 SO3 safety to T16 operate off the ladder
17:29:36 BCEMS EMS branch to command, I'm going to release BM3 and replace them with city M27
17:29:47 BC5 command I copy
17:29:55 EMS3 Rehab grp to E46 are you able to report to rehab?
17:33:52 EMS3 Rehab grp to T16
17:34:26 EMS3 Rehab Grp to E46
17:34:49 EMS3 Rehab grp to T10
17:34:56 T10 T10
17:34:59 EMS3 are you able to report to Rehab
17:35:03 On our way
17:35:06 EMS3 copy



17:35:12	T12	T12 to command, did you call?
17:35:51	CAR5	CAR5 to BC2
17:36:12	CAR5	CAR5 to BC2
17:36:24	CAR5	CAR5 to E4 P1
17:36:29	E4	E4 go ahead
17:36:33	CAR5	have that ladder pipe drop down a little bit so it's below the windowsill and bounce it off Ceiling to cool that rom down
17:36:43	E4	E4 copies
17:45:41	CAR5	CAR5 to Charlie
17:45:46	BC3	Charlie go ahead
17:45:50	CAR5	you got enough lines flowing from the rear, gonna shut down this ladder pipe
17:45:59	BC3	you want me to shut down lines in the rear?
17:46:03	CAR5	negative, we want to keep it flowing while we move that ladder pipe
17:46:08	BC3	yea I got 5 of them in service
17:47:37	EMS3	Rehab grp to T12 can you report to rehab?
17:47:44	T12	T12 I copy, I'm going to need a company to relieve me at the turntable
17:48:22	BC5	command T12 P1
17:48:25	T12	T12 go ahead
17:48:31	BC5	are you available to come to the front of the building? If not just let me know
17:48:36	T12	yes sir, on my way
17:49:00	EMS3	Rehab grp to E46 can you report to rehab?
17:50:20	CAR5	CAR5 to Charlie let me know when you set up and ready to go
17:52:42	BC2	Bravo division to Charlie, we are going to swing that ladder around to the rear and hit it from that upper window
17:53:10	T12P4	46 shut your lines down
17:54:56	EMS3	Rehab grp to T1 report to Rehab
17:55:00	TW1P1	t1 copy rehab
17:57:11	FIB	FIB14 to CAR5
17:57:30	BC6	command post to E52 report to rehab
17:57:41	CAR5	CAR5 to FIB14
17:57:45	FIB	Yea Chief I don't know if you are still looking for the person about the post, I'm with that Person right now on side Bravo right by T16
17:58:00	CAR5	ok I'm coming down
17:58:21	BC6	command post to E46 report to rehab acknowledge
17:58:28	E46	E46 acknowledge
18:05:09	BC5	command to BC2 and BC6 report to the front of the building
18:07:59	BC2	BC2 copies, BTECH2 report to the front
18:12:38	CAR5	CAR5 to T12…has it looking in the rear looking a lot better in the front
18:12:53	T12	currently on side Alpha check with the officer of 8 engine, he's with the member throwing Water at the tip of the ladder
18:13:06	CAR5	ok looks like we can still see it in the middle of the building, can you hit it from your angle?
18:13:14	E8	yea we are trying to we are waiting from T12 to be able to re position the ariel so we can reach over (?) the top, looks like its burning the roof line in there
18:13:47	BC5	command to FIB12
18:13:54	FIB	FIB12
18:13:56	BC5	can you report to the front of the building..vacant lot
18:14:38	FIB	FIB12 to command
18:16:59	BC5	command to FIB12
18:17:05	FIB	FIB12
18:17:08	BC5	When you can CAR1 needs to meet you here corner here this vacant lot
18:17:15	FIB	of we are just finishing up our briefing with ATF and crews
18:17:51	BC5	command to communication

18:18:03FCB go ahead command
18:18:10BC5 update 5210 original fire building majority of the hot spots taken care of in 10, 12 and 14 we are still working on some stubborn hot spots in 5208. BC5 will be remaining out of service and transferring command to BC2, BC6 will become Charlie division. BC3 will be remaining On the scene out of service as well.
18:18:45FCB message received 1818
18:20:01CAR5 CAR5 communications, stand by for a call from me on a mobile
18:20:14BC6 Charlie division to rehab E45 is on the way to you
18:28:20E8 E8 to command
18:28:29BC2 command go ahead, what unit is this and what is your position?
18:28:48E8 this is E8 sir, we are operating on T12s stick I believe it's the Bravo exposure roof line
18:28:58BC6 Charlie to command, I have E21 in the rear I'll send E21 over to relieve E8
18:30:12BCEMS EMS branch to command
18:30:33CAR5 CAR5 go with your message command is involved in a conversation right now
18:30:41BCEMS Just wanted to advise transportation is here with your light towers if you want to let them know where to set them up.
18:30:50CAR5 ok we are going to try and set them up in front of the fire building
18:34:20TW1P1 Redcross is down here requesting to speak to someone
18:34:26BC2 send them up to the command post
18:34:56CAR5 CAR5 communications have SSU give me an update on their progress and ETA to my location
18:35:05FCB 1835
18:35:12SSU2 SSU2 to CAR5 we are less then 2 minutes out sir
18:35:25SSU2 arriving on location up by Belvedere Towers
18:35:36CAR5 Ok I need you to reposition that unit closer to the fire ground come down to the bottom Of Linden Heights and stand by
18:35:45SSU2 bottom of Linden heights I copy Chief
18:37:25BC6 Charlie division to TECH2
18:37:45BT2 BTECH2
18:37:47BC6 Charlie to BTECH2 I have T8 in my division. They are uncommitted with minimum equipment Off and their apparatus can get out of here if need be
18:38:02BT2 Ok we are not there yet. We are going to meet with all the officers shortly
18:38:37SSU2 SSU2 to CAR5 we are at Linden Heights and Belvedere by T25
18:38:46CAR5 Ok stand by bringing a member to you
18:39:47BC2 Command to communications you can place the fire under control
18:39:52FCB fire under control at 1839

REJECTED RADIO TRANSMISSON LOG

TIME	PTT	Radio Type	UNIT	TRANSMISSION TEXT
15:41:34]	TRANSMISSION	Mobile	Squad 40	SQ40 to BC5, we're at Rogers and Liberty Heights, you want us on the box?
15:42:04]	TRANSMISSION	Mobile	Squad 40	SQ40 to BC5, we're at Rogers and Belle, you want us on that box?
15:42:24]	TRANSMISSION	Mobile	Engine 46	E46 at Reisterstown and Druid Park Dr, can you put me on that 46 box?
15:42:36]	TRANSMISSION	Mobile	BC05	BC5 to unit calling, what's your message?
15:42:43]	TRANSMISSION	Mobile	Engine 46	E46 at Reisterstown and Druid Park Dr, can you put me on that box?
15:42:52]	TRANSMISSION	Mobile	BC05	E46 that's affirmative, take the box
15:42:56]	TRANSMISSION	Mobile	Squad 40	SQ40 to BC5, I'm at Rogers and Wabash, can I take the box?
15:43:04	TRANSMISSION	Mobile	BC05	What was the unit?
15:43:06]	REJECTED	Mobile	BC05	
15:43:07	TRANSMISSION	Mobile	Squad 40	SQ40
15:43:08]	TG Sign On	Portable	Sq40-P4*L	
15:43:08]	TG Sign On	Portable	M 12-P3	
15:43:09]	REJECTED	Mobile	BC05	
15:43:11]	TRANSMISSION	Mobile	BC05	That's affirmative, take the box
15:43:16]	TG Sign On	Portable	T16-P4	
15:43:18]	TRANSMISSION	FCB	FCB	Units responding on box alarm 46-40, also receiving 5208 Reisterstown Rd
15:43:38]	TRANSMISSION	Mobile	BC05	BC5 I copy
15:43:41]	TRANSMISSION	Mobile	BC5	there is a large plume of smoke in that area
15:43:49]	TRANSMISSION	Mobile	SO4	SO4 I'm enroute
15:43:52]	TG Sign On	Portable	E46-P4	

15:43:53]	TG Sign On	Portable	E46-P1	
15:43:59]	TG Sign On	Portable	T25-P2	
15:44:01]	TG Sign On	Portable	E45-P4	
15:44:03]	TG Sign On	Portable	SQ40-P1	
15:44:04]	TG Sign On	Mobile	Engine 45	
15:44:07]	TG Sign On	Portable	E29-P3	
15:44:09]	TRANSMISSION	Mobile	Engine 29	E29 hydrant, Belvedere and Liberty Heights
15:44:12]	TG Sign On	Portable	E52-P4	
15:44:17]	TRANSMISSION	Mobile	BC05	46 and 52 just fall in on the box where you belong alright?
15:44:17]	TG Sign On	Portable	T5-P1	
15:44:24]	TRANSMISSION	Mobile	BC05	Cover plugs if necessary
15:44:32]	TG Sign On	Portable	T16-P3	
15:44:33]	TG Sign On	Portable	Truck 5	
15:44:44]	TRANSMISSION	Mobile	Squad 40	SQ40 I'm covering 29
15:44:39]	TG Sign On	Portable	E08-P1	
15:44:48]	TG Sign On	Portable	T10-P1	
15:44:49]	TRANSMISSION	Mobile	Engine 29	E29 2 story middle of group, fire showing from the rear, you can make me command
15:44:51]	TG Sign On	Portable	E06-P3	
15:44:xx]	TRANSMISSION	FCB	FCB	FCB repeats E29's size up, but calls them SQ40 instead of E29*
15:45:06]	TG Sign On	Portable	E29-P2	
15:45:09]	TG Sign On	Portable	A 28-P2	
15:45:11]	TG Sign On	Portable	E29*P1-FCB*L01	Turns on portable radio - TG-FG1

15:45:14]	TRANSMISSION	Mobile	BC05	BC5 on the scene, I'll give you an update in a minute. You can go ahead and make this a working fire. Units are going to stage at Belvedere and Linden Heights.
15:45:21]	TG Sign On	Portable	SQ40-P2	
15:45:24]	TRANSMISSION	FCB	FCB	BC5, message received. Working fire units staging Belvedere and Linden Heights
15:45:27]	TG Sign On	Portable	M 27*P3	
15:45:29]	TG Sign On	Portable	SQ40-P1	
15:45:33]	TG Sign On	Portable	T16-P1	
15:45:36]	TG Sign On	Portable	AF 2	
15:45:39]	TRANSMISSION	FCB	FCB	Repeats previous message
15:45:41]	TG Sign On	Portable	T25-P1	
15:45:44]	TG Sign On	Portable	BC5-P	
15:45:53]	TRANSMISSION	Portable	CAR 5*ACT	CAR 5 enroute. (this message rejects the next 2 PTT attempts by E52)
15:45:54]	REJECTED	Mobile	Engine 52	
15:45:55]	REJECTED	Mobile	Engine 52	
15:46:03]	TG Sign On	Portable	E30-P4	
15:46:05]	TRANSMISSION	Mobile	Engine 52	E52 I'm on scene RIT
15:46:16]	TG Sign On	Portable	T12-P4	
15:46:20]	TG Sign On	Portable	E02-P2	
15:46:21]	TG Sign On	Portable	T12-P1	
15:46:22]	TG Sign On	Portable	BTECH5-P	
15:46:28]	TG Sign On	Portable	BC3-P	
15:46:31]	TG Sign On	Portable	BC12TECH	
15:46:33]	TRANSMISSION	Portable	AF1-P1_NEW	AF-1 I'm enroute

15:46:35]	TRANSMISSION	FCB	FCB	AF1 enroute - 15:46 (FCB acknowledging AF-1 status)
15:46:38]	TG Sign On	Portable	E52-P3	
15:46:46]	TG Sign On	Portable	EMS1*P1	
15:46:49]	TG Sign On	Mobile	Engine 44	
15:46:49]	TG Sign On	Portable	CAR3A*P2	
15:46:55]	TG Sign On	Portable	COLPS 1	
15:47:03]	TRANSMISSION	Portable	SQ40-P2	40 P2 to 29 P2, how's your pressure?
15:47:04]	REJECTED	Portable	BC5-P	
15:47:07]	TG Sign On	Portable	FA-P28	
15:47:10]	TRANSMISSION	Portable	BC5-P	BC5 command post Alpha side, 2 story porch front, second from the end, we got heavy fire in the rear with extension, corrected address is going to be 5210 Linden Heights
15:47:10]	REJECTED	Portable	E29-P2	
15:47:12]	REJECTED	Portable	E29-P2	
15:47:13]	TG Sign On	Portable	CAR4-P2	
15:47:21]	TG Sign On	Portable	FIB-P1	
15:47:22]	TG Sign On	Portable	TW1-P1	
15:47:23]	TG Sign On	Portable	T30-P2	
15:47:24]	TG Sign On	Portable	OEM01-P	
15:47:25]	TG Sign On	Portable	T12-P1	
15:47:26]	TG Sign On	Portable	T27-P3	
15:47:29]	REJECTED	Mobile	Engine 45	
15:47:30]	TG Sign On	Mobile	Truck 10	
15:47:32]	TG Sign On	Portable	E46-P1	

15:47:37]	TRANSMISSION	Mobile	Engine 45	E45 hydrant, St Charles and Belvedere
15:47:37]	TG Sign On	Portable	T29-P3	
15:47:38]	TG Sign On	Portable	EMS1*P1	
15:47:39]	TG Sign On	Portable	BTECH1-P	
15:47:44]	REJECTED	Mobile	Engine 45	
15:47:48]	TG Sign On	Portable	E46-P2	
15:47:50]	TRANSMISSION	Mobile	Truck 12	T12 to Command, just cleared a medic run, we are on Garrison, request to take the box?
15:47:50]	REJECTED	Portable	SQ40-P2	
15:47:52]	TG Sign On	Mobile	EMSA-BC1	
15:47:55]	TG Sign On	Portable	E52-P1	
15:47:57]	TRANSMISSION	Portable	BC5-P	Go ahead take it, and when you arrive I need you to get into 5212
15:48:02]	TG Sign On	Portable	T29-P1	
15:48:02]	REJECTED	Portable	BC5-P	
15:48:03]	TRANSMISSION	Mobile	Truck 12	12 I copy, going to 5212
15:48:06]	TRANSMISSION	Portable	BC5-P	If you don't arrive here first right now, I don't have a truck on the scene
15:48:10]	TG Sign On	Mobile	T29*RT46	
15:48:13]	TRANSMISSION	Mobile	Eng 44*RE75	44 I'm covering 45's plug
15:48:14]	REJECTED	Portable	SQ40-P2	
15:48:16]	TG Sign On	Portable	E20-P1	
15:48:18]	TG Sign On	Portable	BTECH6-P	
15:48:19]	TRANSMISSION	Portable	SQ40-P2	40 Communications, start police Belveder all lanes heavy traffic
15:48:19]	REJECTED	Portable	BC5-P	
15:48:26]	TRANSMISSION	FCB	FCB	Command copy, police notified

15:48:35]	TRANSMISSION	Portable	BC5-P	Command to 29, you reach the back of that dwelling yet?
15:48:38]	TG Sign On	Portable	E44-P1	
15:48:44]	TRANSMISSION	Portable	BC5-P	46 I want you to start knocking down that exterior fire, stop it from walking the block
15:48:48]	TRANSMISSION	Portable	E46-P1	Copy
15:48:53]	TRANSMISSION	Portable	SQ40-P1	SQ40 charge my line 29
15:48:53]	REJECTED	Portable	BC5-P	
15:48:59]	TRANSMISSION	Portable	BC5-P	46, 29 is in the 2nd from the end, I want you to stop it at the 3rd from the end
15:49:01]	TG Sign On	Portable	M 04-P2*Loan	
15:49:07]	TRANSMISSION	Portable	E46-P1	copy, 46 charge my line
15:49:10]	REJECTED	Portable	BC3-P	
15:49:12]	TRANSMISSION	Portable	T25-P1	T25 Command, we have no access to the front
THE FOLLOWING SECTION BEGINS WITH THE MAYDAY AND CONTINUES UNTIL RESOLVED. E29 Lt. utilized mobile radio to give his B.I.R at 15:44:49. The next transmission is from his portable radio in which his mayday was transmitted at 15:49:18. This is a 4 min, 29 second difference.				
15:49:17]	REJECTED	Portable	E29*P1-FCB*L01	Initial Mayday transmission rejected one second prior to being successful
15:49:18]	Mic Keyed	Portable	T25-P1	
15:49:18]	TRANSMISSION	Portable	E29*P1-FCB*L01	E46 MAYDAY, MAYDAY, MAYDAY (Lt mistakenly reports his unit as E46 initially)
15:49:20]	REJECTED	Portable	E46-P2	
15:49:21]	REJECTED	Portable	E46-P2	
15:49:21]	De-Key	Portable	E29*P1-FCB*L01	E29 releases PTT button
15:49:23]	TRANSMISSION	Portable	BC5-P	Command to all units a MAYDAY has been declared - unit calling the MAYDAY go ahead
15:49:23]	REJECTED	Portable	E46-P2	
15:49:23]	TG Sign On	Portable	SO 2-PH	
15:49:28]	TRANSMISSION	Mobile	Engine 52	46 you need the line charged

15:49:28]	REJECTED	Portable	E29*P1-FCB*L01	E29 attempts again to transmit but is rejected by above transmission
15:49:29]	REJECTED	Portable	Sq40-P4*L	
15:49:30]	TG Sign On	Portable	BTECH3-P	
15:49:32]	TG Sign On	Portable	E20-P2	
15:49:33]	TG Sign On	Portable	T12-P1	
15:49:35]	TRANSMISSION	Portable	E29*P1-FCB*L01	E29 MAYDAY MAYDAY MAYDAY first floor
15:49:38]	Unknown	Portable	E29*P1-FCB*L01	
15:49:39]	TRANSMISSION	Portable	BC5-P	Command to the MAYDAY give your location
15:49:40]	TG Sign On	Portable	E45-P2	
15:49:43]	TG Sign On	Portable	E44-P4	
15:49:45]	TRANSMISSION	Portable	Sq40-P4*L	waters coming
15:49:49]	REJECTED	Portable	E46-P2	
15:49:52]	TRANSMISSION	Portable	E29*P1-FCB*L01	29 I can't get out
15:49:53]	REJECTED	Portable	BC3-P	
15:49:56]	TRANSMISSION	Portable	E29*P1-FCB*L01	E29 keys up, .03 seconds of no voice
15:49:55]	TG Sign On	Mobile	BC 6*RO3	
15:49:56]	TG Sign On	Portable	T16-P1	
15:49:57]	REJECTED	Portable	BC5-P	
15:49:58]	REJECTED	Portable	BC5-P	
15:49:59]	TG Sign On	Portable	BC 5-P5*L	
15:49:59]	Unknown	Portable	E29*P1-FCB*L01	
15:50:00]	TRANSMISSION	Portable	BC5-P	Command to communications, I need you to dispatch a RIT task force, a MAYDAY has been declared…Command to all units, emergency traffic only on the radio

15:50:00]	TG Sign On	Mobile	CAR5	
15:50:03]	TG Sign On	Portable	E08-P1	
15:50:14]	TRANSMISSION	FCB	FCB	(Mayday transmission given from FCB) "E29 P1 first floor"
15:50:16]	TG Sign On	Portable	TW1-P1	
15:50:17]	TG Sign On	Portable	M 04-P2	
15:50:23]	TRANSMISSION	Portable	BC5-P	Command to 29 I need you to give me a report on your location
15:50:24]	TG Sign On	Portable	E44-P2	
15:50:26]	TG Sign On	Mobile	Engine 8	
15:50:38]	TRANSMISSION	Portable	M 27*P3	M27 presumably keys up, but doesn't transmit*
15:50:40]	REJECTED	Portable	E29-P3	E29 P3 rejected transmisson (FF Pitt's)
15:50:40]	De-Key	Portable	M 27*P3	
15:50:42]	TRANSMISSION	Portable	E29-P3	E29 P3 keys up, no transmisson
15:50:42]	De-Key	Portable	E29-P3	E29 P3 releases PTT
15:50:42]	TRANSMISSION	Portable	BC5-P	Command to BC3 Charlie Divison, I need you to get 46 and start dumping it in from the rear
15:50:45]	REJECTED	Portable	E29-P3	E29 P3 attempts PTT a 2rd time, 2nd rejected transmission
15:50:46]	REJECTED	Portable	E29-P3	E29 P3 attempts PTT a 3th time, 3rd rejected transmission
15:50:50]	TRANSMISSION	Portable	BC3-P	BC3 copies, we have heavy fire on 3 dwellings, we're starting to put water on it now, do you have the location of the MAYDAY?
15:50:51]	REJECTED	Portable	E29-P3	E29 P3, 4th rejected transmission
15:50:52]	REJECTED	Portable	E29-P3	E29 P3, 5th rejected transmission
15:50:54]	REJECTED	Portable	BC5-P	
15:50:57]	REJECTED	Portable	BC5-P	
15:51:00]	REJECTED	Portable	BC5-P	

15:51:04]	TRANSMISSION	Portable	BC5-P	Command to communications, I need a second alarm
15:51:08]	TRANSMISSION	Portable	BC5-P	Command to 29 I need a report
15:51:08]	TRANSMISSION	FCB	FCB	Communications copies
15:51:12]	TRANSMISSION	Portable	SQ40-P3	SQ40 MAYDAY MAYDAY at the front door, we need a saw to get bars off the windows, the window bars off the windows MAYDAY
15:51:12]	REJECTED	Portable	BC3-P	
15:51:13]	REJECTED	Portable	E29*P1-FCB*L01	
15:51:15]	REJECTED	Portable	E29-P3	E29 P3, 6th rejected transmisson
15:51:16]	REJECTED	Portable	E29-P3	E29 P3, 7th rejected transmission
15:51:17]	REJECTED	Portable	E29-P3	E29 P3, 8th rejected transmission
15:51:19]	TG Sign On	Portable	M 15-P1	
15:51:21]	TRANSMISSION	Portable	BC5-P	OK, 29 can you get out of the dwelling, are all your people accounted for?
15:51:21]	REJECTED	Portable	BC3-P	
15:51:22]	REJECTED	Portable	E29-P3	E29 P3, 9th rejected transmission
15:51:23]	REJECTED	Portable	E29-P3	E29 P3, 10th rejected transmission
15:51:24]	REJECTED	Portable	BC3-P	
15:51:25]	REJECTED	Portable	E29-P3	E29 P3, 11th rejected transmission
15:51:27]	TG Sign On	Portable	M 21-P1	
15:51:28]	TG Sign On	Portable	E21-P4	
15:51:29]	TG Sign On	Portable	E46-P1	
15:51:29]	TRANSMISSION	Portable	E46-P1	46 , more pressure on line
15:51:33]	REJECTED	Portable	SQ40-P3	
15:51:33]	REJECTED	Portable	E29-P3	

15:51:37]	TRANSMISSION	Portable	E29-P3	.02 seconds, did not record transmission**
15:51:38]	De-Key	Portable	E29-P3	
15:51:39]	TRANSMISSION	Portable	BC3-P	Charlie Division, we only have 1 line in the back, we are going to need at least two more
15:51:40]	REJECTED	Portable	BC5-P	
15:51:42]	TG Sign On	Portable	M 27*P3	
15:51:46]	TG Sign On	Portable	M 07-P1*L	
15:51:49]	TRANSMISSION	Portable	BC5-P	Ok Charlie Division, I got units coming on the second alarm, just start grabbing them and using them as you can get them back there
15:51:49]	REJECTED	Portable	E44-P1	
15:51:51]	TG Sign On	Portable	E21-P2	
15:51:51]	TG Sign On	Portable	M 05-P1	
15:51:56]	TRANSMISSION	Portable	BC3-P	Ok, copy that
15:51:59]	TG Sign On	Portable	EMS 1*EMS7*P1	
15:51:59]	TG Sign On	Portable	EMS03-P	
15:52:00]	TRANSMISSION	Portable	BC3-P	do you have a location for the members on the MAYDAY?
15:52:01]	TG Sign On	Mobile	Engine 30	
15:52:04]	TRANSMISSION	Portable	E29*P1-FCB*L01	keyed up, .03 seconds no voice
15:52:04]	REJECTED	Portable	BC5-P	
15:52:04]	TG Sign On	Mobile	Eng E21	
15:52:05]	REJECTED	Portable	BC5-P	
15:52:06]	TG Sign On	Portable	R1-P2	
15:52:06]	REJECTED	Portable	BC5-P	
15:52:07]	Unknown	Portable	E29*P1-FCB*L01	

15:52:08]	TRANSMISSION	Portable	BC5-P	they're reporting 1st floor, we are trying to knock down the fire on the 1st floor now
15:52:13]	TG Sign On	Mobile	Engine 13	
15:52:14]	TRANSMISSION	Portable	T12-P1	T12, I got he bars off the window, I got members down just inside
15:52:14]	REJECTED	Portable	BC3-P	
15:52:15]	REJECTED	Mobile	CAR5	
15:52:21]	REJECTED	Portable	SQ40-P3	
15:52:22]	REJECTED	Portable	SQ40-P1	1st rejected message
15:52:23]	TRANSMISSION	Portable	T12-P1	get me manpower, get them out here sir
15:52:23]	REJECTED	Portable	BC5-P	
15:52:25]	REJECTED	Mobile	Engine 13	
15:52:26]	REJECTED	Portable	SQ40-P3	
15:52:26]	REJECTED	Portable	BC3-P	
15:52:27]	REJECTED	Portable	SQ40-P1	
15:52:28]	TRANSMISSION	Portable	BC5-P	Command to 29, I need a report from you immediately on your PAR
15:52:28]	REJECTED	Portable	BC3-P	
15:52:29]	REJECTED	Portable	SQ40-P1	2nd rejected message
15:52:29]	REJECTED	Portable	SQ40-P3	
15:52:32]	TG Sign On	Portable	EMS 1*EMS7*P1	
15:52:34]	TRANSMISSION	Portable	SQ40-P1	SQ40 to command, got 1 member on the porch need a medic
15:52:33]	REJECTED	Portable	SQ40-P3	
15:52:34]	REJECTED	Portable	BC3-P	
15:52:40]	TRANSMISSION	Portable	BC5-P	Ok I copy, command to the medic unit, report to the front
15:52:40]	REJECTED	Portable	BC3-P	

15:52:41]	TG Sign On	Portable	EMS06-P	
15:52:42]	**REJECTED**	**Portable**	**M 04-P2*Loan**	
15:52:42]	**REJECTED**	**Portable**	**TW1-P3**	
15:52:44]	TG Sign On	Portable	M 01-P2	
15:52:47]	**TRANSMISSION**	**Portable**	**M 11-P1**	**M11 we're enroute, where do you want us on Belvedere?**
15:52:47]	**REJECTED**	**Portable**	**T12-P1**	**1st rejected message**
15:52:48]	TG Sign On	Portable	E21-P1	
15:52:50]	TG Sign On	Portable	T12-P3	
15:52:51]	**TRANSMISSION**	**Portable**	**M 04-P2*Loan**	**Key No Transmission**
15:52:52]	**REJECTED**	**Portable**	**BC5-P**	
15:52:53]	**REJECTED**	**Portable**	**BC5-P**	
15:52:54]	TG Sign On	Portable	M 15-P3	
15:52:54]	**REJECTED**	**Portable**	**BC5-P**	
15:52:56]	**TRANSMISSION**	**Portable**	**BC5-P**	**Unit calling, repeat your message**
15:52:56]	**REJECTED**	**Portable**	**T12-P1**	**2nd rejected message**
15:53:00]	**TRANSMISSION**	**Portable**	**M 11-P1**	**M11, we are still enroute to the scene, you want us on Belvedere or Linden?**
15:53:00]	**REJECTED**	**Portable**	**SQ26-P4**	
15:53:04]	De-Key	Portable	M 11-P1	
15:53:05]	**REJECTED**	**Portable**	**E44-P1**	
15:53:05]	**REJECTED**	**Portable**	**E46-P2**	
15:53:06]	TG Sign On	Portable	E08-P3	
15:53:08]	**TRANSMISSION**	**Portable**	**E44-P1**	**44 to 20 charge it when you can**
15:53:08]	**REJECTED**	**Portable**	**E46-P1**	

15:53:08]	REJECTED	Portable	M 11-P1	
15:53:09]	TG Sign On	Portable	A 25-P1	
15:53:12]	TRANSMISSION	Portable	BC5-P	Command to anybody that can account for 29's members, I need you to account for them
15:53:12]	REJECTED	Portable	E46-P1	
15:53:13]	REJECTED	Portable	E46-P2	
15:53:15]	REJECTED	Portable	E46-P2	
15:53:18]	TG Sign On	Portable	EMS04-P	
15:53:21]	TRANSMISSION	Portable	SQ40-P1	have member from 29 side Alpha
15:53:21]	REJECTED	Portable	BC3-P	
15:53:21]	REJECTED	Portable	E46-P2	
15:53:21]	REJECTED	Portable	E46-P1	
15:53:22]	REJECTED	Portable	E45-P3	
15:53:22]	REJECTED	Portable	E45-P3	
15:53:23]	TG Sign On	Portable	T08-P4	
15:53:26]	TRANSMISSION	Portable	E44-P1	E44 in the rear, 20 charge the line
15:53:26]	REJECTED	Portable	BC5-P	
15:53:28]	REJECTED	Portable	BC5-P	
15:53:31]	TRANSMISSION	Portable	E46-P2	E46 mobile to 44 mobile, charge that hydrant
15:53:31]	REJECTED	Portable	E46-P1	
15:53:32]	REJECTED	Portable	BC5-P	
15:53:32]	REJECTED	Portable	BC3-P	
15:53:33]	REJECTED	Portable	E46-P1	
15:53:33]	REJECTED	Portable	BC5-P	

15:53:38]	TRANSMISSION	Portable	BC5-P	Command to all units responding, I want you to focus your attention on the exposures
15:53:38]	REJECTED	Portable	E46-P2	
15:53:39]	TG Sign On	Portable	BC 6*RO3	
15:53:39]	REJECTED	Mobile	CAR5	
15:53:48]	TRANSMISSION	Portable	E46-P1	46 to mobile, more pressure
15:53:48]	TG Sign On	Portable	T5-P1	
15:53:49]	REJECTED	Portable	SQ40-P1	3rd rejected message
15:53:49]	TG Sign On	Mobile	Rescue 1	
15:53:50]	TG Sign On	Portable	TW1-P1	
15:53:52]	TRANSMISSION	Portable	E46-P2	46 mobile, stand by, waiting for hydrant to be charged, we almost out of water
15:53:52]	REJECTED	Portable	BC5-P	
15:53:52]	REJECTED	Mobile	CAR5	
15:53:53]	REJECTED	Portable	T12-P1	3rd rejected message
15:53:53]	REJECTED	Portable	SQ40-P1	4th rejected message
15:53:53]	REJECTED	Portable	BC5-P	
15:53:53]	TG Sign On	Portable	A 03-P2	
15:53:56]	REJECTED	Portable	SQ40-P1	5th rejected message
15:53:58]	TRANSMISSION	Portable	BC5-P	Command to 52, you are going to be the rescue group supervisor, I need a report on any members from 29 that you remove from the building
15:53:58]	REJECTED	Portable	E46-P1	
15:53:58]	REJECTED	Mobile	CAR5	
15:53:59]	REJECTED	Portable	E46-P1	
15:54:06]	TRANSMISSION	Portable	T12-P1	T12 to command, I'm with the down member just inside the front door, I need engine companies to keep flowing water, we are trying to extricate him now
15:54:07]	REJECTED	Mobile	CAR5	

15:54:08]	REJECTED	Portable	SQ40-P1	6th rejected
15:54:09]	REJECTED	Portable	SQ40-P1	7th rejected
15:54:10]	REJECTED	Portable	SQ40-P1	8th rejected
15:54:13]	REJECTED	Portable	SQ40-P1	9th rejected
15:54:14]	REJECTED	Portable	SQ40-P1	10th rejected
15:54:15]	REJECTED	Portable	SQ40-P1	11th rejected
15:54:17]	REJECTED	Portable	SQ40-P1	12th rejected
15:54:20]	TRANSMISSION	Portable	BC5-P	OK can you account for both the pipe man and the officer?
15:54:20]	REJECTED	Portable	SQ40-P1	13th rejected
15:54:20]	REJECTED	Mobile	CAR5	
15:54:22]	REJECTED	Portable	SQ40-P1	14th rejected
15:54:27]	TRANSMISSION	Portable	E44-P1	44 to 20 mobile, charge the line
15:54:29]	TG Sign On	Portable	E13-P4	
15:54:29]	REJECTED	Portable	E45-P1	
15:54:32]	TRANSMISSION	Portable	E45-P1	E45 PO charge our line, charge it
15:54:32]	REJECTED	Mobile	CAR5	
15:54:38]	TRANSMISSION	Portable	E45-P1	charge that alley line
15:54:38]	REJECTED	Portable	E44-P1	
15:54:41]	TRANSMISSION	Portable	E44-P1	46 charge your 5 side
15:54:41]	REJECTED	Portable	E45-P4	
15:54:44]	TRANSMISSION	Mobile	CAR5	CAR5 to command, place your suppression units on another channel
15:54:44]	REJECTED	Portable	E45-P4	
15:54:45]	REJECTED	Portable	BC3-P	

15:54:45]	REJECTED	Portable	BC5-P	
15:54:46]	REJECTED	Portable	T12-P1	4th rejected message
15:54:52]	TRANSMISSION	Portable	SQ40-P1	SQ40 to command, both members accounted for
15:54:52]	REJECTED	Portable	BC5-P	
15:54:58]	TRANSMISSION	Portable	BC5-P	command to SQ40 you are coming in gugled, I need a report
15:54:58]	REJECTED	Portable	T12-P1	5th rejected message
15:55:03]	TRANSMISSION	Portable	SQ40-P1	SQ40 to command, both members from 29 engine accounted for
15:55:10]	TRANSMISSION	Portable	BC5-P	you got both membes of E29?
15:55:13]	TRANSMISSION	Portable	SQ40-P1	That's affirmative
15:55:18]	TG Sign On	Portable	E30-P4	
15:55:20]	TRANSMISSION	Portable	BC5-P	Command to all units, we are going to remain on this cahnnel, I need a PAR, I need an accountability report. Battalion Tech 5 is going to do a PAR
15:55:20]	REJECTED	Portable	BC3-P	
15:55:20]	REJECTED	Portable	E20-P2	
15:55:30]	REJECTED	Portable	E46-P1	
15:55:31]	REJECTED	Portable	BC3-P	
15:55:34]	TRANSMISSION	Portable	BC5-P	Command to communications, I need 2 additional medic units, I need them to report to the front
15:55:38]	TG Sign On	Portable	E30-P1	
15:55:39]	TRANSMISSION	Portable	FCB	Command, 2 additional medics (gives time**)
15:55:44]	TRANSMISSION	Portable	BC3-P	Battalion Tech 3, come to the rear of the building
15:55:44]	REJECTED	Portable	E46-P1	
15:55:44]	REJECTED	Portable	E20-P2	
15:55:45]	REJECTED	Portable	E45-P1	

15:55:45]	REJECTED	Portable	E46-P1	
15:55:52]	TRANSMISSION	Portable	E46-P1	E46 you have zero water, we need water
15:55:55]	REJECTED	Portable	E46-P2	
15:55:56]	TRANSMISSION	Portable	E46-P2	46 mobile, I'm working on it, nobodys charged the plug so I gotta run down there and charge it
15:55:56]	REJECTED	Portable	E45-P1	
15:55:57]	REJECTED	Portable	BC5-P	
15:55:58]	REJECTED	Portable	E45-P1	
15:55:59]	REJECTED	Portable	E45-P1	
15:55:59]	REJECTED	Portable	BC3-P	
15:56:03]	REJECTED	Portable	E45-P3	
15:56:05]	TRANSMISSION	Portable	E45-P3	keys up no voice**
15:56:06]	TRANSMISSION	Portable	E45-P1	E45 1 to E45 mobile, charge that alley line
15:56:06]	REJECTED	Portable	BC3-P	
15:56:07]	REJECTED	Portable	E45-P3	
15:56:07]	REJECTED	Portable	E45-P3	
15:56:08]	REJECTED	Portable	E45-P3	
15:56:08]	REJECTED	Portable	BC3-P	
15:56:08]	REJECTED	Portable	E45-P3	
15:56:14]	REJECTED	Portable	E45-P4	
15:56:14]	REJECTED	Portable	BC3-P	
15:56:15]	REJECTED	Portable	BC5-P	
15:56:16]	REJECTED	Portable	BC3-P	
15:56:16]	REJECTED	Portable	BC5-P	

15:56:18]	TRANSMISSION	Portable	E45-P4	45 Engine P4 to P2 you want water?
15:56:18]	REJECTED	Portable	BC5-P	
15:56:18]	REJECTED	Portable	BC3-P	
15:56:19]	REJECTED	Portable	BC5-P	
15:56:23]	TRANSMISSION	Portable	BC5-P	Command to T12, I'm going to make you the rescue group supervisor, I need a report on whether we got all the members of E29
15:56:22]	REJECTED	Portable	BC3-P	
15:56:22]	REJECTED	Portable	E45-P2	
15:56:23]	REJECTED	Portable	E44-P1	
15:56:24]	REJECTED	Portable	E45-P2	
15:56:24]	REJECTED	Portable	E44-P1	
15:56:32]	TRANSMISSION	Portable	BC5-P	E46 charge every line you got coming off your wagon, E45 charge your lines
15:56:31]	REJECTED	Portable	T12-P1	6th rejected
15:56:31]	TG Sign On	Portable	EMS02-P	
15:56:31]	REJECTED	Portable	E45-P2	
15:56:41]	TRANSMISSION	Portable	T12-P1	Rescue to command, myself and the officer from T16 have a line. We're making entry alpha side through the front door, have companies in the rear dump all the water they go. We're encountering high heat at the front door, still trying to get a good search.
15:56:41]	REJECTED	Portable	E20-P2	
15:56:43]	REJECTED	Portable	E20-P2	
15:56:49]	TG Sign On	Portable	M 02-P1	
15:56:51]	TG Sign On	Portable	A 24-P1	
15:56:51]	TG Sign On	Portable	E13-P2	
15:56:57]	TG Sign On	Portable	E13-P1	

15:57:03]	TRANSMISSION	Portable	BC5-P	Ok I copy are we still missing someone from E29?
15:57:04]	REJECTED	Portable	E20-P2	
15:57:08]	TRANSMISSION	Portable	T12-P1	I don't know. No ones given me a straight answer on that yet
15:57:09]	REJECTED	Portable	Eng E21	
15:57:15]	TRANSMISSION	Portable	BC3-P	Charlie Division to the 1st engine on the second alarm, I need you to find a hydrant and come to side Charlie with your 2 1/2 and your mini blitz
15:57:30]	TRANSMISSION	Portable	BC5-P	Command to all units, emergency radio traffic only. I have accounted for all 4 members of E29. I need to do a PAR for the rest of the fireground. Communications make the announcement we going to do a PAR.
15:57:33]	TG Sign On	Portable	M 27-P1	
15:57:35]	TG Sign On	Portable	A 601-P1	
15:57:41]	TG Sign On	Portable	M 20-P2*L26A	
15:57:41]	REJECTED	Portable	T12-P1	7th rejected
15:57:42]	REJECTED	Portable	Engine 30	
15:57:44]	TRANSMISSION	Portable	AD06	Command copy
15:57:48]	TRANSMISSION	Mobile	CAR5	CAR 5 on scene
15:57:48]	REJECTED	Portable	T12-P1	8th rejected
15:57:48]	REJECTED	Portable	BC5-P	
15:57:50]	TRANSMISSION	Portable	AD06	Announcement made
15:58:02]	TRANSMISSION	Portable	E20-P2	E20 to E29 I'm covering your hydrant
15:58:02]	REJECTED	Portable	BTECH5-P	
15:58:05]	TG Sign On	Portable	M17-P1*L22A	
15:58:10]	TRANSMISSION	Portable	BTECH5-P	Tech 5 to E46 PAR?
15:58:11]	TG Sign On	Portable	EMS 08-P	

15:58:13]	TG Sign On	Portable	CAR5-P1	
15:58:13]	TG Sign On	Portable	M 04-P2	
15:58:23]	**TRANSMISSION**	**Portable**	**BTECH5-P**	**BT Tech 5 to E46 PAR?**
15:58:26]	TG Sign On	Portable	BCEMS-P	
15:58:32]	**REJECTED**	**Portable**	**E46-P1**	
15:58:32]	**REJECTED**	**Portable**	**E08-P1**	
15:58:33]	**REJECTED**	**Portable**	**E08-P1**	
15:58:33]	**REJECTED**	**Portable**	**E46-P1**	
15:58:35]	**TRANSMISSION**	**Portable**	**E46-P1**	**E46 P1 PAR 3 members in the rear, one at pumper**
15:58:35]	**REJECTED**	**Mobile**	**Eng E21**	
15:58:36]	**REJECTED**	**Portable**	**E08-P1**	
15:58:40]	**TRANSMISSION**	**Portable**	**BTECH5-P**	**SQ40 PAR?**
15:58:45]	**TRANSMISSION**	**Portable**	**E08-P1**	**8 mobile, add 2 sections**
15:58:51]	**TRANSMISSION**	**Portable**	**SQ40-P1**	**SQ40 PAR 3 members side A, 1 at wagon**
15:58:59]	**TRANSMISSION**	**Portable**	**BTECH5-P**	**E45 PAR**
15:59:03]	**TRANSMISSION**	**Portable**	**E45-P1**	**E45 PAR side Charlie, PO at the wagon**
15:59:03]	**REJECTED**	**Portable**	**E08-P1**	
15:59:03]	TG Sign On	Portable	M 16-P1	
15:59:04]	**REJECTED**	**Portable**	**EMS05-P**	
15:59:11]	**TRANSMISSION**	**Portable**	**BTECH5-P**	**E20 PAR?**
15:59:11]	**REJECTED**	**Portable**	**A 03-P2**	
15:59:12]	**REJECTED**	**Portable**	**A 03-P2**	
15:59:13]	**REJECTED**	**Mobile**	**Eng E21**	
15:59:16]	**TRANSMISSION**	**Portable**	**E20-P1**	**E20 PAR 3 members side Alpha, 1 member by the pumper *(PASS device heard)**
15:59:22]	**TRANSMISSION**	**Portable**	**BTECH5-P**	**E44 PAR?**

15:59:26]	TRANSMISSION	Portable	E44-P1	E44 PAR, PO at wagon, lead off at wagon
15:59:31]	TRANSMISSION	Portable	BTECH5-P	T25 PAR?
15:59:36]	TRANSMISSION	Portable	E08-P1	8 hold off on just the one section and charge it
15:59:36]	REJECTED	Portable	T25-P1	
15:59:37]	REJECTED	Portable	T25-P1	
15:59:41]	TRANSMISSION	Portable	T25-P1	T25 PAR, side Alpha
15:59:46]	TRANSMISSION	Portable	BTECH5-P	T16 PAR?
15:59:46]	TG Sign On	Portable	M 10-P1*L	
15:59:52]	TRANSMISSION	Portable	T16-P1	T16 Portable 1, in doorway side Alpha, have a member by the truck in the rear, Portable 3 and 4 I don't have them yet
16:00:06]	TRANSMISSION	Portable	BTECH5-P	T12 PAR?
16:00:10]	TRANSMISSION	Portable	T12-P1	T12 portable 1 I'm on the front porch, you are going to have to call portable 2, 3 and 4 and get their locations
16:00:20]	TRANSMISSION	Portable	BC 5-P5*L	T12 portable 2, I'm on the Charlie side
16:00:33]	TRANSMISSION	Portable	BTECH5-P	T12 Portable 3, 4 PAR?
16:00:51]	TRANSMISSION	Portable	T12-P1	T12 portable 1, I can see portable 4, he is in the front street, call portable 3, he's a member from E46
16:00:52]	REJECTED	Portable	E20-P2	
16:01:06]	TRANSMISSION	Portable	BTECH5-P	Copy
16:01:07]	REJECTED	Portable	BC3-P	
16:01:09]	TRANSMISSION	Portable	BC3-P	Charlie division, we need BGE emergency response, we have multiple wires arcing back here
16:01:17]	TRANSMISSION	Portable	BC5-P	Command, copy that. Communications give me BGE, T-12 portable 3 I need a report from you
16:01:32]	TRANSMISSION	Portable	BC5-P	Command to communications, PAR has been conducted 1st alarm units, all units are PAR
16:01:39]	TRANSMISSION	FCB	AD06	BC5 message received, all units PAR, 16:01
16:01:39]	REJECTED	Portable	M 18-P2	
16:01:47]	TRANSMISSION	Portable	T12-P1	T12 to command, still could use a second line alpha side front porch, original fire building

16:02:09]	TRANSMISSION	Portable	BC3-P	Charlie Division,we have 4 hose lines in service, we are starting to get ahead of it now, have all units stay 3rd from the end that's going to collapse. We already had a partial collapse on the second one on the end in the rear
16:02:26]	TRANSMISSION	Portable	BC5-P	OK I copy Charlie Division, the second is going to be the original fire building, the third is going to be the bravo exposure, correction, delta exposure. Command to all units operating the delta exposure, evacuate the building.
16:02:50]	TRANSMISSION	Portable	EMS05-P	EMS… (no message)
16:02:51]	TRANSMISSION	Portable	AD06	TONE 2: Communications to all units box alarm 46-40 operating on the delta exposure, evacuate the building
16:03:13]	TRANSMISSION	Portable	BC5-P	Command E8 E30, I need you to report to the front, you are going to be the RIT team
16:03:20]	TRANSMISSION	Portable	BC3-P	Charlie Division, E8 lead off, they're my main water source on the Charlie side
16:03:34]	TRANSMISSION	Portable	T12-P1	Rescue to command, confirming the PAR, and all members accounted for from E29 and E46?
16:03:54]	TRANSMISSION	Portable	EMS05-P	EMS5 to command, I'm going to commit myself to M11
16:04:00]	TRANSMISSION	Portable	BC5-P	Command to Charlie Division, you got a truck back there yet?
16:04:07]	TRANSMISSION	Portable	BC3-P	That's affirmative, I have 16 and 12 back here
16:04:12]	TRANSMISSION	Portable	BC5-P	OK, I copy
16:04:14]	TRANSMISSION	Portable	BC5-P	Command to T12 portable 1, you are relieved of your rescue group supervisor duties. I need a report of where you're at and what you're doing

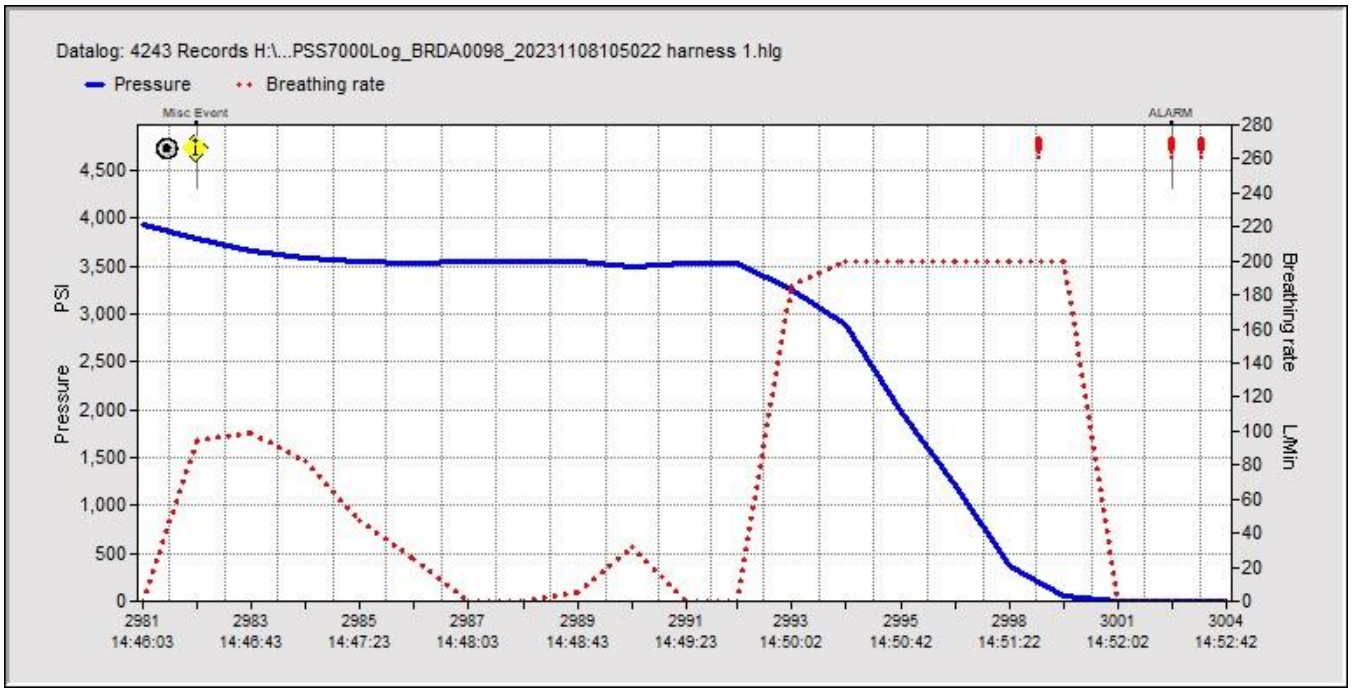
REMAINDER OF TRANSCRIPT IS PRIMARILY FIRE SUPPRESSION ACTIVITY. AT THIS POINT E29 MEMBERS ARE IN PROCESS OF BEING TREATED AND TRANSPORTED

SCBA DATA LOG: SIDE BY SIDE

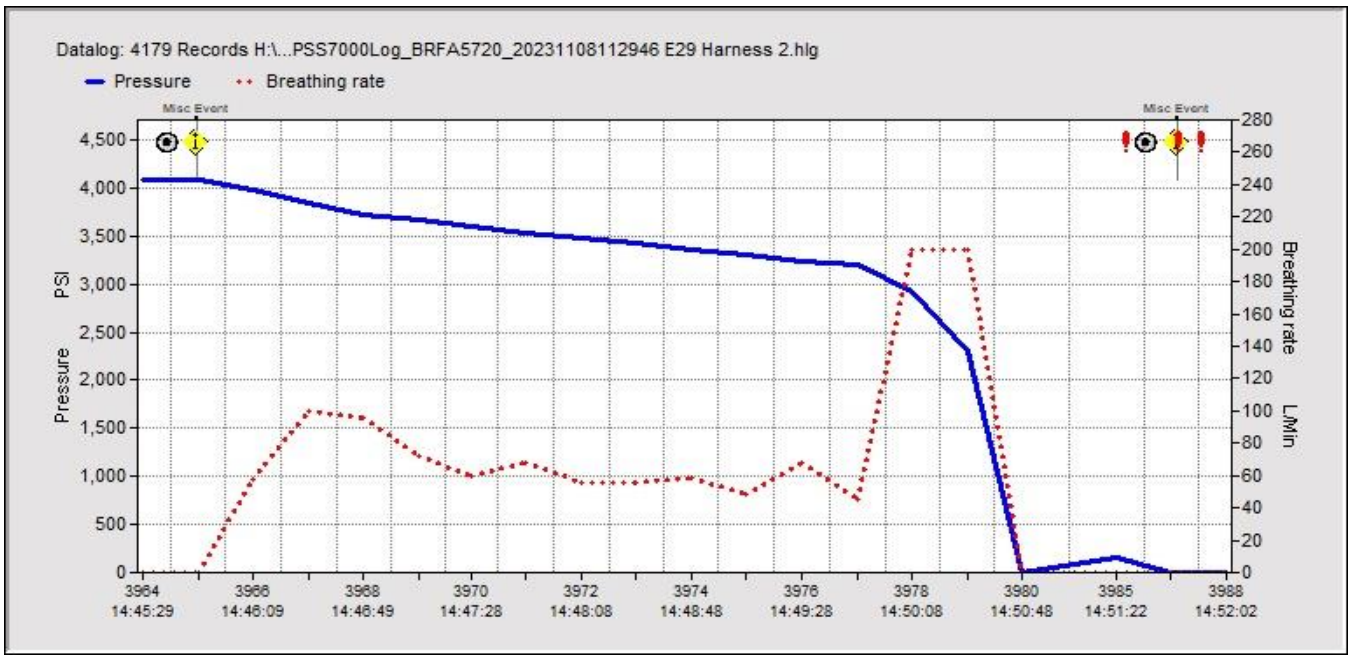
Captain Rinaldo SCBA Log					EFF Pitts SCBA Log				
Time	Event	Pressure	Breathing	Description	Time	Event	Pressure	Breathing	Description
1545	None				1545	On/Off	On		SCBA turned on
1545	On/Off	On		SCBA turned on	1545	Misc Event			Motion sensor enabled
1545	Misc Event			Motion sensor enabled	1545	Pressure	4085.3	0	
1546	Pressure	3938.8	0		1546	Pressure	3977.4	57.75	
1546	Pressure	3775.1	94.87		1546	Pressure	3834.8	99.58	
1546	Pressure	3662.4	99.05		1546	Pressure	3726.8	96.09	
1547	Pressure	3582.3	82.36		1547	Pressure	3660.8	71.97	
1547	Pressure	3549.6	47.55		1547	Pressure	3605.1	60	
1547	Pressure	3535.1	24.75		1547	Pressure	3528.5	67.98	
1548	Pressure	3542.3	0		1548	Pressure	3476.4	55.66	
1548	Pressure	3553.3	0		1548	Pressure	3417.1	55.68	
1548	Pressure	3545.9	4.65		1548	Pressure	3354.5	58.41	
1549	Pressure	3498.7	31.72	FIRST MAYDAY	1549	Pressure	3309.3	48.43	
1549	Pressure	3527.8	0	SECOND MAYDAY	1549	Pressure	3229.3	68.25	
1549	Pressure	3535.1	0		1549	Pressure	3194.4	45.15	
1550	Pressure	3247.8	185.5		1550	Pressure	2923	200	
1550	Pressure	2880.4	200		1550	Pressure	2293.2	200	
1550	Pressure	1967.6	200		1550	Pressure/ALARM	1423.2	200	Low pressure alarm
1551	Pressure/ALARM	1214.7	200	Low pressure alarm	1551	Watchdog Timeout	N/A	N/A	Electrical fault- montion sensor enabled again
1551	Pressure	367.26	200		1551	Pressure/ALARM	153.04	0	Low pressure alarm
1551	Pressure/ALAR	50.86	200	Motion pre-alert on	1551	Pressure/ALARM	0		Manual DSU alarm
1552	Pressure/ALARM	0		ADSU (Motion) alarm	1552	Pressure	0		Truck 12 has bars off, can see EFF Pitts inside
1552	Pressure	0			1552	Pressure	0		
1552	Pressure	0			1552	Pressure	0		

SCBA GRAPH'S; CAPTAIN RINALDO AND FF/EMT PITTS

Captain Rinaldo's SCBA Graph



FF/EMT Pitts' SCBA Graph



FULL THIRD-PARTY TURNOUT GEAR EVALUATION

The full 3rd party turnout report is accessible here:

https://s3.amazonaws.com/baltimorecity.gov.if-us-east-1/s3fs-public/2025-04/bcfd_firefighter_ppe_investigation_report_final_2025-03-26_with_appendices.pdf

FULL THIRD-PARTY SCBA EVALUATION

The full 3rd party SCBA report can be found here:

https://s3.amazonaws.com/baltimorecity.gov.if-us-east-1/s3fs-public/2026-02/bcfd_firefighter_ppe_investigation_report_corrected_final_2025-08-08_2.pdf

APPENDIX C: *APPARATUS*

E-29 HOSE AUDIT

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
472	Hose Testing Completed	4/25/2023	1.75" E29-2	0683	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
468	Hose Testing Completed	4/25/2023	1.75" E29-3	0684	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
475	Hose Testing Completed	4/25/2023	1.75" E29-5	0687	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
467	Hose Testing Completed	4/25/2023	1.75" E29-7	0689	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
515	Hose Testing Completed	4/25/2023	1.75" E29-8	0690	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
477	Hose Testing Completed	4/25/2023	1.75" E29-10	0692	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
466	Hose Testing Completed	4/25/2023	1.75" E29-12	0694	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
471	Hose Testing Completed	4/25/2023	1.75" E29-13	0695	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
470	Hose Testing Completed	4/25/2023	1.75" E29-14	0696	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
476	Hose Testing Completed	4/25/2023	1.75" E29-15	0697	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
516	Hose Testing Completed	4/25/2023	1.75" E29-17	0699	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
473	Hose Testing Completed	4/25/2023	1.75" E29-18	0700	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
474	Hose Testing Completed	4/25/2023	1.75" E29-19	0701	True	True	False	

1 3/4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
469	Hose Testing Completed	4/25/2023	1.75" E29-20	0702	True	True	False	

2.5 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
478	Hose Testing Completed	4/25/2023	2.5" E29-1	0703	True	True	False	

2.5 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
481	Hose Testing Completed	4/25/2023	2.5" E29-2	0704	True	True	False	

2.5 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
482	Hose Testing Completed	4/25/2023	2.5" E29-3	0705	True	True	False	

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
480	Hose Testing Completed	4/25/2023	2.5" E29-4	0707	True	True	False	

2.5 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
483	Hose Testing Completed	4/25/2023	2.5" E29-5	0708	True	True	False	

2.5 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
479	Hose Testing Completed	4/25/2023	2.5" E29-6	0709	True	True	False	

3 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
485	Hose Testing Completed	4/25/2023	3" E29-1	0706	True	True	False	

3 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
487	Hose Testing Completed	4/25/2023	3" E29-2	0710	True	True	False	

3 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
491	Hose Testing Completed	4/25/2023	3" E29-3	0711	True	True	False	

3 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
484	Hose Testing Completed	4/25/2023	3" E29-4	0712	True	True	False	

3 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
490	Hose Testing Completed	4/25/2023	3" E29-5	0713	True	True	False	

3 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
486	Hose Testing Completed	4/25/2023	3" E29-6	0714	True	True	False	

3 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
489	Hose Testing Completed	4/25/2023	3" E29-7	0715	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
458	Hose Testing Completed	4/25/2023	4" E29-22	1334	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
446	Hose Testing Completed	4/25/2023	4" E29-23	1309	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
443	Hose Testing Completed	4/25/2023	4" E29-24	1317	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
444	Hose Testing Completed	4/25/2023	4" E29-1	0643	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
456	Hose Testing Completed	4/25/2023	4" E29-2	0644	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
449	Hose Testing Completed	4/25/2023	4" E29-3	0645	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
460	Hose Testing Completed	4/25/2023	4" E29-4	0646	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
90	BCFD In-House Hose Repair	6/14/2022	4" E29-5	0647				(NULL)
455	Hose Testing Completed	4/25/2023	4" E29-5	0647	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
457	Hose Testing Completed	4/25/2023	4" E29-6	0648	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
93	BCFD In-House Hose Repair	6/14/2022	4" E29-7	0649				(NULL)
442	Hose Testing Completed	4/25/2023	4" E29-7	0649	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
459	Hose Testing Completed	4/25/2023	4" E29-8	0650	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
445	Hose Testing Completed	4/25/2023	4" E29-9	0651	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
450	Hose Testing Completed	4/25/2023	4" E29-10	0652	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
463	Hose Testing Completed	4/25/2023	4" E29-11	0653	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
465	Hose Testing Completed	4/25/2023	4" E29-12	0654	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
462	Hose Testing Completed	4/25/2023	4" E29-13	0655	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
464	Hose Testing Completed	4/25/2023	4" E29-14	0656	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
451	Hose Testing Completed	4/25/2023	4" E29-15	0657	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
454	Hose Testing Completed	4/25/2023	4" E29-16	0658	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
461	Hose Testing Completed	4/25/2023	4" E29-17	0659	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
453	Hose Testing Completed	4/25/2023	4" E29-18	0660	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
448	Hose Testing Completed	4/25/2023	4" E29-19	0661	True	True	False	

4 inch hose

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	NFPA 1962 - Hose Testing	Hose Testing - Pass	Hose Fail	Service Ticket Number
92	BCFD In-House Hose Repair	6/14/2022	4" E29-21	0663				(NULL)
447	Hose Testing Completed	4/25/2023	4" E29-21	0663	True	True	False	

APPENDIX C: *APPARATUS*

E-29 EQUIPMENT AUDIT

E29 Black 1-3/4\" Shutoff

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	BCFD Personnel	Equipment Repair Type	Extended Notes	Attachment
1009	Equipment PM/Repair	4/25/2023	0000179424	0000179424	Donley, Christian	Preventative Maintenance	Bail and Fog nozzle lubricated and checked. No issues at time of service.	

E29 Black 1-3/4\" Tip

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	BCFD Personnel	Equipment Repair Type	Extended Notes	Attachment
1010	Equipment PM/Repair	4/25/2023	0000180913	0000180913	Donley, Christian	Preventative Maintenance	Bail and Fog nozzle lubricated and checked. No issues at time of service.	

E29 Blue 1-3/4\" Shutoff

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	BCFD Personnel	Equipment Repair Type	Extended Notes	Attachment
1011	Equipment PM/Repair	4/25/2023	0000179426	0000179426	Donley, Christian	Preventative Maintenance	Bail and Fog nozzle lubricated and checked. No issues at time of service.	

E29 Blue 1-3/4\" Tip

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	BCFD Personnel	Equipment Repair Type	Extended Notes	Attachment
1012	Equipment PM/Repair	4/25/2023	0000180885	0000180885	Donley, Christian	Preventative Maintenance	Bail and Fog nozzle lubricated and checked. No issues at time of service.	

E29 Brown 2-1/2\" Shutoff

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	BCFD Personnel	Equipment Repair Type	Extended Notes	Attachment
1013	Equipment PM/Repair	4/25/2023	0000179425	0000179425	Donley, Christian	Preventative Maintenance	Bail and Fog nozzle lubricated and checked. No issues	

E29 Purple 1-3/4\" Shutoff

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	BCFD Personnel	Equipment Repair Type	Extended Notes	Attachment
1014	Equipment PM/Repair	4/25/2023	0000179423	0000179423	Donley, Christian	Preventative Maintenance	Bail and Fog nozzle lubricated and checked. No issues at time of service.	

E29 Purple 1-3/4\" Tip

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	BCFD Personnel	Equipment Repair Type	Extended Notes	Attachment
1015	Equipment PM/Repair	4/25/2023	0000180417	0000180417	Donley, Christian	Preventative Maintenance	Bail and Fog nozzle lubricated and checked. No issues at time of service.	

E29 White 1-3/4\" Shutoff

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	BCFD Personnel	Equipment Repair Type	Extended Notes	Attachment
1016	Equipment PM/Repair	4/25/2023	0000179421	0000179421	Donley, Christian	Preventative Maintenance	Bail and Fog nozzle lubricated and checked. No issues at time of service.	

E29 White 1-3/4\" Tip

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	BCFD Personnel	Equipment Repair Type	Extended Notes	Attachment
1017	Equipment PM/Repair	4/25/2023	0000180220	0000180220	Donley, Christian	Preventative Maintenance	Bail and Fog nozzle lubricated and checked. No issues at time of service.	

E29 Yellow 1-3/4\" Shutoff

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	BCFD Personnel	Equipment Repair Type	Extended Notes	Attachment
1018	Equipment PM/Repair	4/25/2023	0000179432	0000179432	Donley, Christian	Preventative Maintenance	Bail and Fog nozzle lubricated and checked. No issues at time of service.	

E29 Yellow 1-3/4\" Tip

Maintenance ID	Maintenance Form	Maintenance Date	Asset Serial #	Asset Tag #	BCFD Personnel	Equipment Repair Type	Extended Notes	Attachment
1019	Equipment PM/Repair	4/25/2023	0000180941	0000180941	Donley, Christian	Preventative Maintenance	Bail and Fog nozzle lubricated and checked. No issues at time of service.	

APPENDIX C: *APPARATUS*

E-29 PUMP TEST

ATLANTIC EMERGENCY SOLUTIONS
7462 Candlewood Rd Suite E
Hanover, Md 21076

OFFICE: 1-800-754-1450
FAX: 410-609-2309

ANNUAL PUMP TEST

DATE: 11-27-23 PASSED

144935 HRS
MILEAGE 19841
TECHNICIAN LARRY DILL

COMPANY BCFD
YEAR/MAKE 2009 PIERCE
MODEL IMPEL
VIN 4P1CJ01A19A010245
UNIT NO. E-77/OLD E-29 / 22185-01 / 090101

PUMP MAKE WATEROUS
PUMP MOD CSU
PUMP SER 136390
GPM 1500

DRY PRIME TEST. HELD FOR 3 MINUTES WITH FULL DROP
PASS **FAIL** X

TEST CONDITIONS: TEMP 45 ELEVATION 200 ABSL
LIFT HEIGHT 4 FT SUCTION SIZE 6 # OF LENGTHS 1
TIME REQUIRED TO PRIME 28 SEC

150 PSI TEST GPM REQUIRED 1510 AT 150 PSI

	IN VAC	DISCHARGE PSI	SUCTION ALLOW.	NET PSI	TIP PSI	FLOW GPM	RPM	ORG RPM
START	12	150	+4	154	N/A	1520	1570	1566
10 MIN	12	150	+4	154	N/A	1510	1570	
20 MIN	12	150	+4	154	N/A	1510	1570	

OIL PRESSURE 42 ENGINE WATER TEMP 200
PASS X **FAIL**
RELIEF DEVISE TEST AT FULL FLOW - MAX INCREASE 4 **PASS** X **FAIL**

200 PSI TEST GPM REQUIRED 1051 AT 200 PSI
CHANGE-OVER VALVE IN N/A

	IN VAC	DISCHARGE PSI	SUCTION ALLOW.	NET PSI	TIP PSI	FLOW GPM	RPM	ORG RPM
START	10	200	+4	204	N/A	1060	1690	1683
10 MIN	10	200	+4	204	N/A	1060	1690	

OIL PRESSURE 45 ENGINE WATER TEMP 205
PASS X **FAIL**

250 PSI TEST GPM REQUIRED 750 AT 250 PSI
CHANGE-OVER VALVE IN N/A

	IN VAC	DISCHARGE PSI	SUCTION ALLOW.	NET PSI	TIP PSI	FLOW GPM	RPM	ORG RPM
START	7	250	+4	254	N/A	750	1850	1840
10 MIN	7	250	+4	254	N/A	750	1850	

OIL PRESSURE 50 ENGINE WATER TEMP 210
PASS X **FAIL**

DID UNIT HOLD PRIME BETWEEN TESTS? YES
OIL, TEMP, RPM TAKEN FROMPUMP PANEL/ECU
NO LOAD GOVERNOR SPEED2400RPM
CHECK ALL GAUGESOK
COMMENTS: CHECK ENGINE LIGHT ON, TRV LIGHT ON, LEAKS UNDER PUMP

APPENDIX D: *UNDERWRITERS LAB*

FULL FIRE MODELING REPORT

The full FSRI report is accessible here: https://doi.org/10.60752/102376.28723049

APPENDIX E: ***MANUAL OF PROCEDURE; BALTIMORE CITY FIRE DEPARTMENT***

MOP 110-3

MOP 301

MOP 301-1

MOP 310

MOP 601

MOP 601-1

MOP 601-3

MOP 601-5

MOP 601-6

MOP 602-1

MOP 602-8

MOP 602-9

MOP 602-13

MOP 602-18

APPENDIX F: ***FIREGROUND AUDIO FILE***

https://s3.amazonaws.com/baltimorecity.gov.if-us-east-1/s3fs-public/2025-03/incident_audio.wav

APPENDIX G: *MEMBER FIRERECORDS TRAINING LOGS*

DEPUTY CHIEF ARLEN DOLES

All Members Report

Training	Date	Unit
Automotive Fire Training	2/28/2020	
Battalion Level Training	12/29/2019	T12
	4/21/2019	SQ40
	4/21/2019	T12
	4/21/2019	BC5
Department Level Training	4/12/2019	
Ebola Training	10/18/2020	SQ40
	10/18/2020	T12
ENGINE COMPANY OPERATIONS	1/12/2020	
General Company Level Training Topic	4/21/2019	SQ40
	4/21/2019	T12
Mayday Training	12/9/2018	T12
Officer Development Day 1	3/7/2022	
SCBA Training	10/25/2019	T12
SCBA, BUDDY BREATHING, HOSE MAZES	12/9/2018	T12

BATTALION CHIEF MICHAEL RUDASILL

All Members Report

Training	Date	Unit
Air Monitoring	10/30/2018	
Automotive Fire Training	8/3/2023	BC3
Bailout System Training	6/16/2023	BC3
Battalion Level Training	7/2/2023	BC 3
	2/26/2023	T10
	2/26/2023	BC3
	3/22/2018	
	3/22/2018	
	1/1/2023	E42
Box Area Training	4/28/2019	T10
Building Inspection	7/2/2023	BC 3
Carbon Monoxide Meter Training	3/7/2019	
Communications Training	10/12/2023	BC3
Department Level Training	12/8/2022	E43
EMT Refresher	9/26/2023	
EMT Refresher Day Three	9/20/2023	
Engine Operations	12/9/2022	E45
	7/10/2023	BC3
Flash Over Simulator	11/6/2020	
FMLA Training	6/8/2023	BC3
General Company Level Training Topic	8/19/2023	BC3
Ground Ladders Training	7/5/2019	T10
HazMat Tech Recertification Course	7/28/2010	
	8/10/2009	
	4/7/2010	
INCIDENT COMMAND ACCOUNTABILITY, MDT CAD PROCEDURES, PAR	11/25/2022	
MASS CASUALTY INCIDENTS	5/24/2020	E43
METRO SUBWAY RESPONSES	9/28/2023	BC3
	4/29/2019	T26
	5/7/2023	BC 3
Mobile Data Terminal Training	6/6/2023	BC3
Monitor Pipe Training	5/13/2023	BC 3
MOP Training	3/16/2018	E8

BATTALION CHIEF MICHAEL RUDASILL Contd.

MOP Training	9/2/2023	BC3
	5/23/2023	BC 3
	7/22/2023	BC3
	8/3/2023	BC3
	8/17/2023	BC3
	6/14/2023	BC 3
	9/26/2023	BC3
MTA Training	2/7/2023	BC2
	6/12/2020	E52
Operations Memo	8/19/2023	BC3
	6/30/2023	BC 3
Policy and Procedures	5/15/2023	BC 3
Traffic Incident Management Training	6/3/2023	
Training Manual	8/31/2023	BC3
Vehicle Stabilization Training	5/7/2023	BC 3

BATTALION CHIEF JOHN ELLIS

All Members Report

Training	Date	Unit
Acting Battalion Chief Training	8/13/2018	
Battalion Level Training	4/15/2022	E8
	4/15/2022	T10
	3/8/2020	
	1/22/2021	E36
	1/22/2021	BC3
	12/29/2019	T12
Department Level Training	4/26/2019	
ENGINE COMPANY OPERATIONS	1/12/2020	
Fire Records Training	10/22/2018	BC5
General Company Level Training Topic	3/8/2020	
HAZARDOUS MATERIALS AIR MONITORING	1/20/2019	E20
Mayday Training	12/9/2018	T12
SCBA Training	10/25/2019	T12
SCBA, BUDDY BREATHING, HOSE MAZES	12/9/2018	T12
Special Operations and Bloodborne Pathogen Training	10/11/2019	

CAPTAIN DILLON RINALDO

All Members Report

Training	Date	Unit
Acting Lieutenant Training	5/1/2020	T16
	11/4/2021	E13
	12/11/2019	E13
	9/18/2019	
	3/28/2023	E46
	2/18/2022	E13
	2/18/2022	T16
	5/3/2020	E13
	2/24/2022	E13
	2/24/2022	T16
	7/19/2022	E46
	10/22/2020	E8
	9/20/2019	T21
	8/3/2019	E35
	12/24/2019	E13
	4/17/2020	
	12/13/2020	
	10/11/2021	E13
	7/20/2021	E13
	7/25/2022	E46
	6/18/2020	E13
	10/19/2018	E35
Aerials Ladders Training	8/3/2023	T8
	6/20/2020	T16
	6/20/2020	E13
	4/19/2023	T27
	9/18/2020	T16
	9/18/2020	E13
	3/20/2022	E13
Air Bag Procedures	12/16/2018	T21
Air Monitoring	8/15/2020	E13
	1/19/2019	E41
	1/7/2019	E35

CAPTAIN DILLON RINALDO Contd.

Air Monitoring	4/24/2023	
	1/18/2019	E35
	4/6/2019	E35
Alarm Systems Training	8/9/2019	E35
	3/12/2022	T16
	3/12/2022	E13
Apparatus Familiarization	7/4/2018	E35
	12/13/2021	T16
	8/11/2019	E35
	1/11/2019	E35
	12/22/2018	T21
	12/19/2019	E50
	10/1/2021	T20
Area Familiarization	7/12/2018	E35
	7/12/2018	E35
	6/2/2020	E13
	7/9/2022	E46
	5/25/2022	E13
	7/28/2023	E46
	4/29/2022	E13
	12/17/2019	E14
	1/12/2020	E13
	3/14/2022	E13
	5/3/2023	E46
	9/16/2020	E13
	9/16/2020	T16
	11/25/2019	E13
	12/24/2021	E13
	5/12/2022	E43
	8/22/2022	E20
	2/19/2020	E13
	5/2/2019	E13
	3/22/2022	
	6/16/2023	E46
	11/14/2022	E46
	1/2/2020	E13

Attic Operations Training	12/14/2018	T21
Auto Extraction	1/17/2019	E35
	2/5/2020	T16
Automotive Fire Training	1/23/2019	E35
Awareness Training	1/27/2023	E46
	11/9/2022	E46
	9/25/2021	E13
Backing Up Safety	3/15/2021	E5
	8/19/2019	E35
	1/25/2019	E35
	8/3/2023	T8
Bailout System Training	5/10/2023	E36
	5/25/2023	E46
Basement Fire Operations	9/3/2021	E13
	1/31/2019	E35
	8/4/2020	T16
Battalion Level Training	11/20/2018	E35
	4/7/2019	E35
	3/16/2020	E13
	8/30/2020	E13
	9/26/2018	E35
	11/7/2021	SQ26
	12/18/2022	E46
	10/23/2022	E46
	3/22/2020	E13
	3/22/2020	T16
	1/1/2023	E46
	1/1/2023	T27
	3/4/2023	E46
	6/12/2023	E46
	7/30/2023	E46
	9/24/2023	E46
	1/1/2023	E46
	1/1/2023	T27
	12/9/2018	

Battalion Level Training	5/3/2020	T16
	5/3/2020	E13
	11/28/2021	E13
	11/28/2021	T16
	12/14/2022	E46
	12/28/2022	SQ40
	11/30/2022	E46
	6/3/2018	E35
	6/4/2023	E46
	6/4/2023	T27
	9/20/2020	T16
	9/20/2020	E13
	1/12/2020	E13
	8/13/2023	E46
	4/9/2023	E46
	11/18/2018	T21
	11/18/2018	E35
	7/28/2019	E35
	1/9/2019	E35
	1/13/2019	E35
	5/17/2022	E13
	5/17/2022	T16
	6/2/2022	E13
	6/16/2023	E46
	9/11/2022	E46
	5/31/2020	T16
	5/31/2020	E13
	12/13/2020	E13
	2/14/2019	E35
	10/14/2018	E35
	7/17/2022	E46
	3/24/2020	E13
BATTALION LEVEL TRAINING OCTOBER 2017	11/20/2018	E35
	1/9/2022	T26
BCFD Word Forms	5/21/2022	E31
Bed Bug Prevention	2/3/2020	E13

BLS Drugs	12/28/2021	E52
	10/10/2023	E46
BLS Protocols	2/9/2021	T8
	8/5/2020	E13
Boat Operations	10/29/2021	E13
Box Area Training	1/27/2022	E13
	1/27/2022	T16
	11/14/2018	E35
	9/7/2022	E46
	5/11/2023	E46
	2/28/2023	T27
	5/25/2023	E46
	9/24/2023	E46
	9/30/2023	E46
	1/2/2021	E52
	3/22/2020	E13
	1/3/2023	E46
	2/22/2023	E46
	6/29/2023	E47
	8/23/2023	E46
	4/13/2022	E13
	9/5/2019	E35
	2/10/2023	E46
	8/9/2023	T3
	6/1/2023	E46
	6/1/2023	T27
	11/7/2022	E46
	11/23/2019	E13
	7/11/2022	E46
	8/27/2019	E35
	10/31/2022	T27
	6/4/2023	E46
	6/21/2023	SQ40
	4/13/2023	T27
	2/8/2019	E35
Building Construction	12/4/2020	E13

Building Construction	2/2/2019	E35
Building Inspection	3/6/2020	E13
	9/22/2020	E13
	8/13/2023	E46
	9/30/2023	E46
	6/18/2023	E46
	8/23/2023	E46
	3/11/2020	E53
	3/14/2023	T18
	8/1/2023	E53
	7/8/2023	E52
	5/2/2023	E46
	4/12/2023	T21
Building Pre Fire Planning	2/13/2020	
	11/6/2021	E13
	2/7/2019	E35
CAD Training	10/8/2019	E57
	11/24/2022	T27
	7/29/2023	T18
Carbon Monoxide Calls	9/4/2019	E35
	2/16/2019	E35
	2/7/2021	T16
	2/7/2021	E13
	9/3/2019	SQ26
Carbon Monoxide Meter Training	3/8/2020	E13
	2/21/2021	E13
	2/18/2019	E35
	3/30/2023	E46
Carbon Monoxide Procedures	4/16/2019	E51
Carbon Monoxide Training	1/17/2023	E46
CHOOSING AND ADVANCING PROPER ATTACK LINES, LEADING OFF AND COVERING HYDRANTS, ESTABLISHING WATER SUPPLY	4/22/2019	E35
	2/10/2019	
	4/4/2021	E13
	4/4/2021	T16
CISM Interviews	1/25/2022	E13
	1/25/2022	T16

CAPTAIN DILLON RINALDO Contd.

Communications Training	9/9/2019	E47
Community Outreach	3/27/2021	E13
	3/30/2022	E31
COVID-19 Training	5/27/2020	E13
	5/27/2020	T16
	12/2/2022	E46
	11/23/2020	E13
	12/5/2020	E13
	12/19/2020	E13
	4/15/2020	E29
	11/17/2020	E13
	12/20/2021	E31
	3/9/2021	E13
Department Level Training	12/8/2022	E46
	4/5/2019	
	5/10/2022	T10
Drive Cam Training	3/16/2020	E13
Elevator Training	9/6/2019	E35
	12/28/2022	SQ40
EMEDS Elite Training	1/18/2020	E13
EMEDS Training	1/27/2023	E46
	10/6/2019	E35
Emergency Medical Technician	10/21/2020	E13
	10/27/2020	E13
ENGINE COMPANY OPERATIONS	11/7/2019	E13
	12/25/2019	E13
	1/11/2019	
	9/21/2018	E35
	9/21/2018	E35
	5/12/2022	E43
	4/12/2021	E13
	8/28/2022	E46
Engine Operations	7/29/2020	E8
	7/27/2022	E46
	2/16/2023	E46
	3/30/2023	E46

CAPTAIN DILLON RINALDO Contd.

Engine Operations	7/3/2018	E35
	7/3/2018	E35
	9/22/2019	E35
	5/31/2023	E46
	3/24/2023	E46
	10/16/2023	E46
	8/10/2023	E46
	5/3/2023	E46
	9/19/2023	E33
	8/15/2023	E46
	8/29/2023	E46
	8/13/2020	E13
	8/13/2020	T16
	2/5/2021	E55
	3/10/2022	E13
	4/1/2022	T16
	2/16/2022	E13
	8/23/2022	E58
	12/24/2022	E46
	4/7/2023	E46
	10/6/2023	E46
	4/21/2022	E13
	10/1/2022	E46
	5/23/2023	
	3/23/2023	E20
	12/29/2022	E23
	4/25/2023	E46
Equipment Maintenance	9/18/2019	
	6/8/2023	E46
	3/8/2023	E46
	6/14/2023	E46
	3/14/2023	E46
EVD Driver Training	4/19/2023	T27
	4/19/2023	T12
	7/24/2020	T16
	7/20/2020	E13

EVD Driver Training	7/20/2020	T16
EVD Roof Trainig	2/8/2022	T16
EVD Tillering Training	8/31/2023	T27
	8/31/2023	E46
	9/8/2019	T21
	11/9/2020	T16
	8/13/2019	
	9/22/2019	T21
Fireground Operations	5/19/2020	E13
	10/31/2022	E46
	10/2/2023	T12
	7/30/2023	E46
	5/1/2023	E46
	8/15/2023	E46
	8/31/2022	E14
	5/11/2023	E46
	5/11/2023	SSU5
	2/4/2023	E46
FMLA Training	12/6/2021	E14
Foam Operations Training	1/31/2022	E13
	1/31/2022	T16
Forced Entry Training	11/20/2018	T21
General Company Level Training Topic	7/4/2018	
	1/28/2020	E13
	9/26/2020	T3
	4/7/2022	E13
	4/7/2022	T16
	1/4/2021	E13
	9/22/2023	E46
	3/12/2020	E8
	11/8/2019	E44
	11/11/2020	E13
	1/6/2021	E13
	4/5/2019	E35
	1/23/2019	T21
	3/8/2022	E2

CAPTAIN DILLON RINALDO Contd.

General Company Level Training Topic	2/2/2022	E13
	12/14/2021	E13
	9/11/2021	E13
	3/19/2021	E13
	3/14/2019	T21
	3/20/2020	E20
	10/1/2021	E44
	10/1/2021	E13
	7/8/2020	E33
Ground Ladders Training	1/12/2023	T27
	2/28/2023	T27
	11/20/2018	T21
	12/24/2018	T21
	3/1/2023	T27
HazMat Operations	4/19/2022	
HazMat Operations Field	11/29/2022	
Hazmat Operations Training	11/29/2022	T6
	1/4/2020	E13
	10/8/2019	
HI RISE FIRE OPERATIONS	7/26/2019	E35
	6/6/2020	E13
	6/6/2020	E58
	7/12/2020	E13
	7/12/2020	T16
	4/5/2019	
	2/15/2021	E13
High Rise Pack Training	6/6/2020	T16
	9/30/2021	E13
	6/4/2020	E13
Home Visit Training	4/15/2023	E46
	3/27/2019	T21
Hose Training	12/6/2022	E33
	5/9/2023	E46
	3/8/2023	E46
	6/2/2023	E46
	3/3/2023	E46

Hose Training	3/30/2023	E46
	8/28/2020	E13
	12/29/2020	E13
	12/16/2022	E46
	9/1/2021	E13
	9/24/2023	E46
	12/10/2020	E13
	8/13/2023	E46
	10/10/2023	E46
Human Trafficking Training (2022)	7/17/2022	E46
Hydrant Training	10/6/2023	E46
	6/8/2020	E13
	6/8/2020	T16
	10/11/2019	E35
	8/7/2023	E46
	3/28/2022	E13
	3/28/2022	T16
	3/13/2023	T18
	6/12/2023	E46
	9/22/2023	E46
	9/30/2020	E13
	5/11/2020	E13
	5/1/2023	E46
INCIDENT COMMAND ACCOUNTABILITY, MDT CAD PROCEDURES, PAR	5/1/2022	E13
	5/1/2022	T16
INCIDENT COMMAND, ACCOUNTABILITY, AIR MONITORING, MDT CAD, PAR	2/5/2020	T16
Leading Off Training	12/22/2021	E13
	8/26/2022	E20
Mayday Training	9/17/2021	T16
	3/20/2019	E35
Monitor Pipe Training	3/28/2019	E35
	9/2/2018	E35
	8/23/2023	E46
	12/4/2018	E35
MOP Training	3/22/2019	
	9/29/2020	E13

MOP Training	11/21/2018	E35
	4/2/2021	E13
	3/24/2023	E46
	1/26/2020	E13
	5/10/2022	T10
	5/10/2022	E8
	11/2/2022	E46
	3/6/2023	E46
	5/31/2023	E46
	9/28/2023	E46
	4/11/2019	E35
	4/11/2019	T30
	8/10/2022	E46
	6/28/2022	E8
	11/15/2022	T27
	5/15/2023	E46
	2/17/2023	E45
	7/8/2023	E46
MOU Training	3/24/2019	E35
MTA Training	9/30/2019	E35
	5/17/2023	E46
Non-specific 2 and 1	3/4/2022	E13
	12/9/2019	T16
	2/21/2020	E13
Office Training	8/15/2019	E35
	10/16/2019	E35
	1/31/2023	E46
	5/4/2023	E46
	10/27/2022	E52
	2/14/2023	E46
	2/8/2022	E13
	10/8/2020	E13
	2/22/2023	E46
	5/25/2020	E13
	2/23/2021	E13
	9/18/2019	E35

CAPTAIN DILLON RINALDO Contd.

Office Training	3/22/2023	E46
	10/31/2019	E44
Operations Memo	5/17/2023	E46
	11/24/2021	E29
Overhaul Training	8/30/2020	
	10/29/2022	T12
	10/1/2019	E35
PLACING LINES IN SERVICE	4/21/2019	
	7/25/2020	E55
	11/19/2018	
PO Drafting Training	8/12/2022	E46
PO Driver Training	12/9/2018	E35
	3/5/2019	E35
	9/27/2022	E46
	8/12/2022	E46
	8/18/2022	E46
	11/16/2022	E46
	11/28/2021	E13
	9/29/2022	E46
	12/8/2022	E46
	10/26/2022	E46
	11/14/2022	E46
	11/22/2022	E46
	3/22/2019	E35
	5/1/2022	E13
	8/28/2022	E46
	6/10/2020	E13
PO Pumping Training	4/15/2019	E35
	3/12/2019	E35
	11/9/2019	E13
	10/8/2021	E13
	10/13/2022	E46
	10/26/2022	E46
	6/16/2022	E13
	2/18/2023	E46
	2/28/2023	E46

PO Pumping Training	11/22/2022	E46
	2/6/2019	E35
	3/14/2019	E35
	5/3/2020	E13
	8/9/2020	E13
	8/12/2022	E46
	1/11/2023	E46
	1/25/2023	E46
	3/19/2019	E35
	1/3/2019	E35
	10/24/2020	E13
	3/11/2021	E13
	4/26/2022	E13
	7/17/2022	E46
	8/4/2022	E46
	8/9/2022	E46
	12/18/2022	E46
	8/30/2018	
	1/1/2023	E46
	9/21/2022	E46
	11/16/2022	E46
	2/20/2023	E46
	4/24/2019	E35
	1/15/2020	E13
	12/8/2022	E46
	8/28/2022	E46
	4/6/2019	E35
	4/6/2019	T21
	3/6/2023	E46
Policy and Procedures	4/13/2019	E35
PPE Training	3/30/2023	E46
	6/12/2019	E50
	8/7/2023	E46
	11/8/2022	E46
Proper Lifting Training	6/29/2022	T3
Proper Tool Care	10/18/2023	E46

CAPTAIN DILLON RINALDO Contd.

Pump Operator Training	8/12/2022	E46
Radio Training	3/4/2023	E46
	12/16/2021	T16
Riot Training	10/14/2019	E35
	4/21/2019	E35
RIT Training	8/26/2019	E57
	4/9/2023	E46
	2/17/2020	E13
	2/17/2020	T16
	3/6/2023	E46
	11/30/2022	E46
	4/23/2019	E35
Safety Training	8/31/2023	E46
Saw Training	10/27/2021	E13
	2/11/2020	E13
	10/28/2020	T10
	10/26/2019	E35
SCBA Training	9/30/2020	E13
	12/21/2020	E13
	3/25/2021	T16
	3/25/2021	E13
	9/13/2021	T16
	12/14/2022	E46
	9/14/2022	E46
	11/11/2022	T27
	11/11/2022	E46
	1/31/2023	E46
	2/4/2023	E46
	2/10/2023	E36
	11/22/2022	E46
	6/18/2022	E13
	10/26/2020	E13
	9/24/2020	E13
	2/13/2021	T16
	9/27/2021	E13
	4/5/2022	E6

CAPTAIN DILLON RINALDO Contd.

SCBA Training	12/8/2021	E13
	9/29/2022	E46
	10/12/2022	E45
	12/1/2020	E47
	9/9/2022	E46
	5/15/2023	E46
	6/2/2023	E46
	11/21/2022	T16
	3/28/2023	E46
	8/9/2023	E46
	8/9/2023	T3
	8/15/2023	E46
	9/24/2023	E46
	8/4/2022	E46
	8/10/2022	E46
	8/18/2022	E46
	11/2/2022	T27
	11/2/2022	E46
	6/12/2020	E13
	11/23/2020	E13
	11/23/2020	T16
	2/10/2022	E13
	2/10/2022	T16
	10/1/2022	E46
	6/8/2022	E13
	1/9/2022	T26
	11/18/2018	E35
	8/28/2022	T27
	8/28/2022	E46
	2/18/2023	E46
	3/1/2023	T27
	6/14/2023	E46
	9/22/2023	E46
	11/14/2022	E46
	2/16/2023	T27
	3/22/2023	E46

CAPTAIN DILLON RINALDO Contd.

SCBA Training	7/22/2020	T16
	1/20/2021	E13
	12/6/2021	E14
	7/11/2022	E46
	7/19/2022	E46
	11/29/2022	T6
	7/8/2020	E33
	8/26/2022	E20
	11/8/2022	E46
	1/11/2023	E46
	5/9/2023	E46
	4/15/2023	E46
	4/24/2023	E45
	10/2/2023	E46
	9/26/2020	T3
	7/14/2022	E45
	12/29/2022	E23
	9/11/2022	E46
	11/7/2022	E46
	6/12/2023	E46
	8/31/2023	E46
Scene Safety and Size Up	11/1/2020	T16
	11/1/2020	E13
	8/7/2023	E46
	11/16/2020	E13
Signal 40 Training	7/29/2019	E35
Snow Chain Training	1/6/2022	T26
	12/14/2020	E13
	1/30/2021	T16
	2/18/2021	E13
Special Operations and Bloodborne Pathogen Training	12/9/2019	
Stryker Stretcher Training	5/17/2022	E13
Subway Training	2/20/2023	E46
	8/1/2019	E35
	4/25/2020	E13
Traffic Incident Management Training	9/30/2023	

Training Manual	2/28/2019	E29
	1/10/2020	E13
	9/28/2023	E52
	10/31/2020	E13
	1/20/2020	E13
TRUCK COMPANY OPERATIONS	10/27/2020	
	2/10/2019	
	7/12/2021	E13
	12/14/2018	T21
Truck Operations	3/17/2021	E13
	12/1/2020	E47
	10/18/2023	E46
	10/18/2023	T27
	10/15/2022	T12
	10/16/2023	E46
	3/31/2023	T10
	4/10/2023	T18
	9/20/2023	T16
	3/27/2023	T26
	10/28/2022	T6
	1/4/2023	T27
	5/10/2023	T8
	4/13/2023	T27
Truck Training 2.0	3/3/2021	T16
Truck Training 3.0	11/30/2022	E46
Uniform Training	4/25/2023	E46
Ventiliation Training	1/25/2023	E46
	1/25/2023	T27
XAM Training	8/6/2019	E35

EMT/FF RODNEY PITTS

All Members Report

Training	Date	Unit
Apparatus Familiarization	8/8/2023	E29
Carbon Monoxide Calls	9/9/2023	E29
Engine Operations	8/14/2023	E29
	8/30/2023	E29
Fireground Operations	8/24/2023	E29
	9/1/2023	E29
	10/11/2023	E29
Hose Training	8/16/2023	E29
MOP Training	9/25/2023	E29
	10/3/2023	E29
Office Training	10/1/2023	E29
SCBA Training	8/28/2023	E52
	10/17/2023	E29

EMT/FF RODNEY PITTS Contd.

6/26/2023	Light Rail / Subway
6/27/2023	Turnout gear / Radio Operations / Telestaff Ops/ Leadoff
6/28/2023	Light Rail / Subway
6/29/2023	MPI w/ Capt. Tricarico
6/30/2023	SCBA Refreshing / Buddy Breathing / Leadoff
7/1/2023	
7/2/2023	
7/3/2023	TIC Operations(lecture and BBw/Fake Smoke)
7/4/2023	Holiday
7/5/2023	Hose Deployment / Advancing
7/6/2023	2-1/2" Attack Line/ Breach Off
7/7/2023	2-1/2" Attack Line/ Breach Off
7/8/2023	
7/9/2023	
7/10/2023	Flashover
7/11/2023	Ladders(2p 35',2P 24', 1P24'), Comb
7/12/2023	Ladders(2p 35',2P 24', 1P24'), Comb
7/13/2023	Burn Building - Live Fires
7/14/2023	Ladders(2p 35',2P 24', 1P24'), Comb
7/15/2023	
7/16/2023	
7/17/2023	Basement Fires
7/18/2023	Saw Operations
7/19/2023	Flying Standpipe/ Highrise Ops
7/20/2023	Flying Standpipe/ Highrise Ops
7/21/2023	Large Area Search / Forced Entry
7/22/2023	
7/23/2023	
7/24/2023	Bailout
7/25/2023	Bailout
7/26/2023	Leadoff / Hose Deployment
7/27/2023	TIC Operations
7/31/2023	Graduation