

Montgomery County Fire & Rescue Service

POST INCIDENT ANALYSIS

8701 Arliss Street Silver Spring, MD 20910

August 10, 2016



Submitted by:

Battalion Chief Tracy McDonald

Battalion 1, C Shift

Contributors

Battalion Chief Mike Leigh
Lieutenant Jason Smith

Captain Jason Masters
Lieutenant Shawn Goodbrod

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INTRODUCTION

On August 10, 2016, an off-duty Montgomery County Police (MCP) Officer was working his part-time job at the Flower Branch apartments on Arliss Street. He exited the leasing office located at 8628 Piney Branch Road, which is attached to 8701 Arliss Street, at the end of his shift. After locking up, he went to the Long Branch Recreation Center to back up another on-duty MCP officer who was issuing a citation. At approximately 2350 hours, both officers heard a loud boom and felt their cruisers and the ground shake. The off-duty officer left to investigate and drove south on Piney Branch Road. As he turned the corner onto Arliss Street, he observed that 8701 Arliss Street was ablaze and that the second and third floors had collapsed down onto the first floor. He immediately called the police dispatchers over the radio and reported a building on fire with collapse and asked for Fire/ Rescue to respond. This was the first alert to the Emergency Communications Center (ECC) of the incident at 8701 Arliss Street.

A few observations happened prior to dispatch. Personnel at the first due station, (Fire Station 16) heard the sound of an explosion, but thought it was a transformer. Battalion Chief 701 was in her office and heard the MCP officer's transmission, went to her vehicle and started responding to the call. By the time Battalion Chief 701 reached New Hampshire Avenue and I-495, the pre-alert for the box alarm had sounded. By this time, the ECC was receiving several calls from residents in the apartment complex about the fire and reported to responding units that several people were trapped inside the building.

Fire/Rescue units were initially dispatched to 8644 Piney Branch Road, where the 911 calls were originating from. This is in the same complex as 8701 Arliss Street in Flower Branch Apartments. As initial units arrived, they encountered a heavy volume of fire throughout two attached buildings on Arliss Street, later identified as 8701 and 8703 Arliss Street. The floors on 8701 were collapsed in the center of the building near the main entry and stairwell. Injured victims who were able to walk were being helped away from the scene by police officers. There were occupants in the windows on Side Delta of 8701 awaiting rescue from the third floor. These rescues were made immediately upon arrival of Fire/Rescue units. Three people in total were brought down by ground and aerial ladders to safety. After these rescues were made, crews went to the windows on Side Alpha and made entry to search for other victims, traveling as far into the building as they could go considering the instability of the floors. As other units arrived on the scene, hoselines were directed from the exterior of the building at each corner to protect the searches.

Crews found no other accessible victims during the primary search of 8701 Arliss Street and exited the structure while other crews continued to fight the fire from the exterior. Large hoselines were placed on the outside of the buildings to extinguish the fire so that a systematic secondary search could be completed in both buildings. As the interior conditions became more tenable, crews entered both buildings searching from one

apartment to the next to look for more victims. None were found during the first six-hour operational period.

It was evident that the fire was the result of an explosion as there was a large debris field on Arliss Street in front of the buildings and into the shopping center parking lot across the street. The presence of the debris field and the possibility of explosion was communicated by Truck 716 to Command.

MCP officers started to walk wounded patients away from the area of the fire and towards the parking lot of the Bestway Supermarket. Due to the number of people injured, a Mass Casualty Incident (MCI) was declared and additional units were dispatched to triage, treat, and transport the patients. In total, 39 patients, including 3 Montgomery County Fire and Rescue Services (MCFRS) personnel were treated and transported to local hospitals.

Extinguishment efforts continued throughout the night and into the next morning until the fire was determined under control. Search and stabilization of buildings in the complex other than 8701 and 8703 was performed during the first six-hour period and the buildings were allowed to be reoccupied as those functions were completed. American Red Cross representatives arrived on the scene and set up shelter at the Long Branch Recreation Center for displaced occupants. They also provided meals to Fire/ Rescue personnel after the first morning.

The investigation as to the cause and origin began that night and continued into the following days. The MCFRS Technical Rescue Team (TRT) was dispatched for building stabilization of both buildings based on a recommendation of an on-scene engineer who deemed the buildings unsafe to enter without shoring. The MCFRS Fire and Explosives Investigation section (FEI) continued the investigation efforts after this was done, along with the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), the Office of the State Fire Marshal, Prince George's County Fire Investigation Bureau, the National Transportation Safety Board (NTSB), and other agencies.

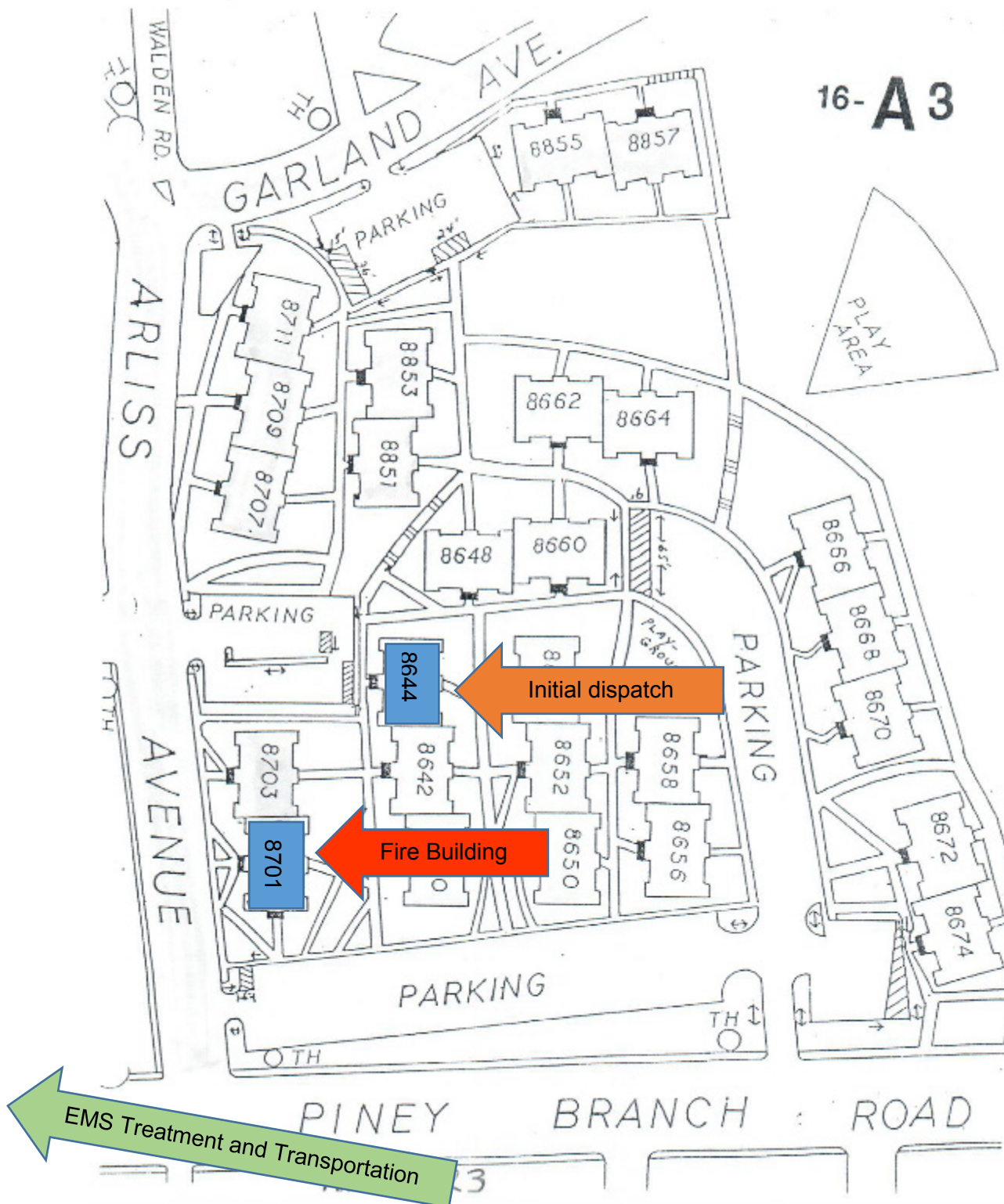
The searches continued to locate people who were reported missing. In all, seven people perished in the fire. The scene was relinquished to the NTSB so that they could continue the investigation. A press release from the NTSB website can be found here: <https://www.nts.gov/news/press-releases/Pages/PR20160817b.aspx>

This incident was very complex in that there were several issues that needed to be addressed simultaneously. Two buildings were on fire with people trapped, obvious rescues needed to be made, searches for occupants who were unaccounted for needed to be performed, there was an MCI of 39 people, the structures were unstable due to an explosion, there were electrical hazards, and there was an active gas-fed fire. Recovery efforts were extensive and lasted several days as did investigations.

BUILDING STRUCTURE / SITE LAYOUT

8701 Arliss Street is a three-story garden style apartment from Side Alpha with an additional terrace level accessible on Side Charlie. This building is part of a 26-building apartment complex adjacent to the intersection of Piney Branch Road and Arliss Street. 8701 Arliss Street is attached to 8703 Arliss Street on Side Bravo of the building. In addition, 8628 Piney Branch Road is attached to 8701 Arliss Street on Side Delta of the building and serves as the rental office for the entire complex. On the following page is the map that was distributed to all nearby stations as the “pre-plan” or “complex map”.

It should be noted that there is no history of any fire code violations in this complex that would have impacted the incident.



This map denotes the fire building, the original dispatched address, and the direction of the EMS area for the MCI

FIREGROUND OPERATIONS

Overview

On Wednesday, August 10, 2016, at 2355 hours, units were dispatched to a report of fire from the third floor of an apartment building at 8644 Piney Branch Road. The corrected address was 8701 Arliss Street with an explosion, heavy fire throughout, and building collapse. This incident also had a mass casualty component and operations were divided between fire and emergency medical services (EMS) once the MCI was discovered by Command.

The weather in the area at the time of the incident was clear with temperatures of 80 degrees Fahrenheit with winds from the south at 9 miles per hour. Weather was not a factor in the outcome of this incident.

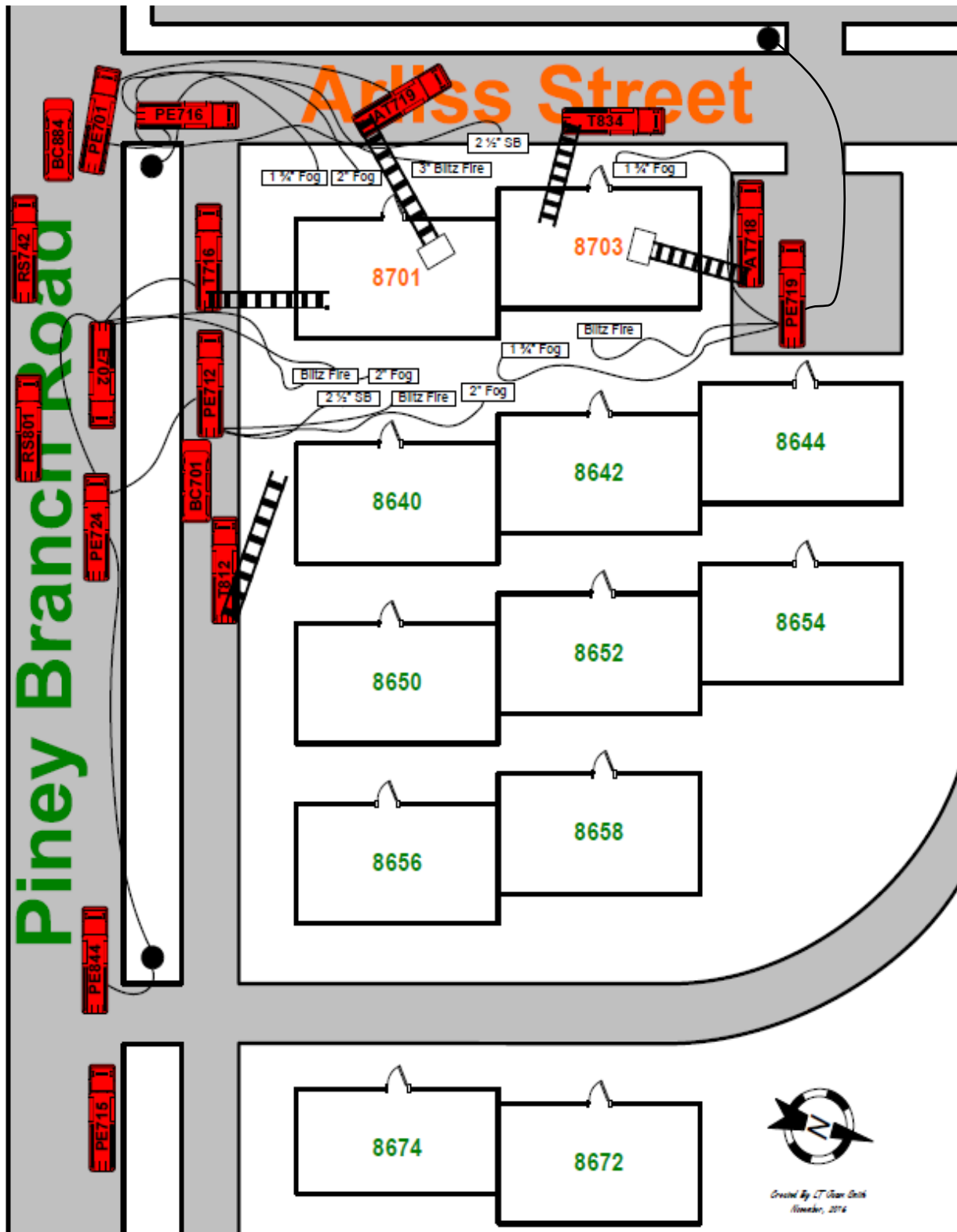
Operations

While units were still responding, ECC notified Battalion Chief 701 that they had multiple calls and were starting the Rapid Intervention Dispatch (RID). Shortly after, ECC stated that there was a report of people trapped on the second and third floors. Based on this information, Battalion Chief 701 requested a Task Force while still en route. Battalion Chief 701 ensured that the first due unit, Paramedic Engine 716, was direct on the message.

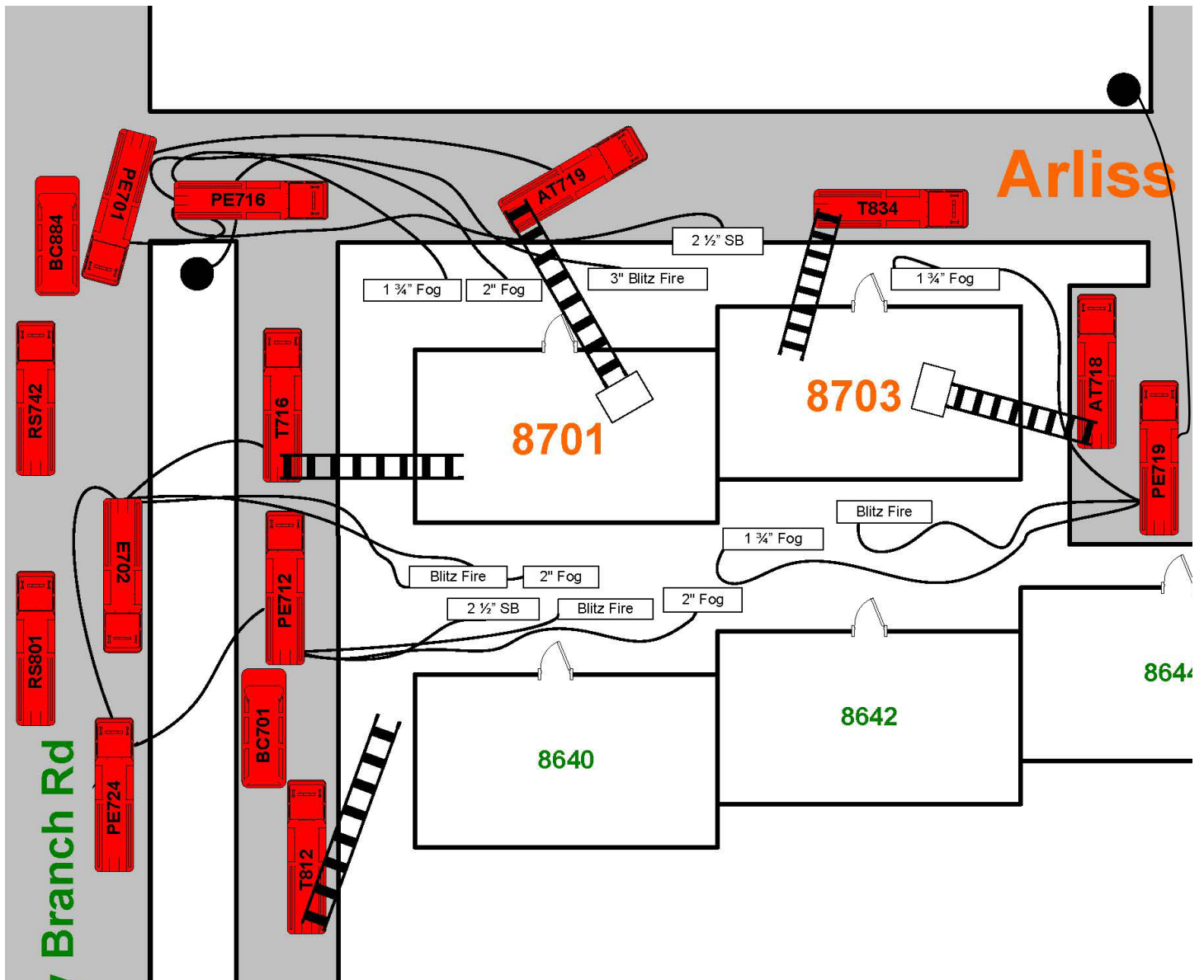
Paramedic Engine 716 gave layout instructions to Paramedic Engine 701 with a hydrant location based on the dispatched address. Paramedic Engine 716 arrived on the scene and gave a report of a three-story garden apartment with heavy fire and requested the RID and Task Force. Paramedic Engine 716 also stated they were pulling a two-inch line to Side Alpha.

Battalion Chief 701 arrived on the scene and updated the report with two buildings on fire, one fully involved with collapse of the building, and requested the Second Alarm. Battalion Chief 701 established Level II Command in the Battalion Chief vehicle on Side Alpha of the building. Battalion Chief 701 repositioned the vehicle on Side Delta of 8701 Arliss Street in the side parking lot closest to Piney Branch Road. Had the Incident Commander positioned on Side Alpha, as originally intended, the vehicle would have been in the debris field from the blast which later became part of the investigation and was for a time, considered a crime scene.

The correct address of the fire building was 8701 Arliss Street. The Bravo Exposure building, 8703 Arliss Street was partially attached to the fire building and was also fully involved from the terrace level to the top floor on at least half of the building.



Apparatus positioning and hose line placement for first alarm units



Apparatus positioning and hose line placement for first alarm units



Side Delta of 8701 Arliss Street from Piney Branch Road

The fire building, 8701 Arliss Street, collapsed in several areas and was fully involved on Sides Alpha and Charlie from the terrace level to the top floor. Rescues were performed on Side Delta of the fire building and were the initial priority. This was the only part of the building not involved in fire. Crews initially operated exterior hand lines at the Alpha/Delta and Charlie/Delta corners to protect the crews making rescues and the civilians being rescued. The objective was to keep the fire in check until the immediate rescues were complete.

As additional units arrived on the scene, units and groups were assigned to the fire building and Exposure Bravo, 8703. Primary searches were started in the Exposure Bravo building. Searches in the fire building continued from windows due to the collapse of the building at the entryway on Side Alpha.

Subsequently, the focus from keeping the fire in check on the exterior was shifted to extinguishment and master streams were set in place to accomplish this task.

It was determined that the fire was gas fed and units were directed to extinguish the bulk of the fire from the exterior of the buildings, but not completely extinguish the fire until the gas company arrived to shut the gas off to the two buildings. This was also so that the stability of the building could be reevaluated to determine whether to continue rescue operations and start secondary searches. Washington Gas and PEPCO were requested.

It was also announced that this incident was possibly the result of an explosion considering the massive debris field in front of the buildings on Arliss Street and the many damaged vehicles in front of the building. Also, the fire wall that separated 8701 and 8703 was missing as it was apparently blown away by an explosion and it caused extension into all floors of 8703.



Side Alpha of 8701 Arliss Street. A small part of the debris field is in the foreground. The collapsed area is where the original entryway and stairwell to the building were.



The fire wall that was blown out between 8701 on the right, and 8703 on the left.

The following divisions/groups were made:

Fire Attack Group - Supervisor - Paramedic Engine 716 - later relieved by Chief 801 Bravo who was operating as Battalion Chief 884. The group was divided into two areas, Side Alpha and Side Charlie. Large lines were initially placed at the Alpha/Delta and Charlie/Delta corners of the building to protect the Rescue Group, other crews, and citizens. Crews transitioned to Sides Alpha and Charlie for defensive operations and master streams were put in place.

Bravo Exposure Group - Supervisor - Paramedic Engine 719 - later relieved by Chief 812 and subsequently, Chief 705 Charlie. Large lines were placed on the exterior of the building on Sides Alpha and Charlie for defensive operations.

Rescue Group - Supervisor - Paramedic Engine 701 - coordinated with truck crews to ensure that rescues were made on Side Delta of the fire building. Although Paramedic Engine 701 was second due, the officer was assigned as the group supervisor so that Truck 716's officer could operate with their crew to effect rescues.

Incident Scene Safety Officer (ISSO) - Chief 702 who was supplemented by Safety 700 upon his arrival. The ISSO originally operated on Side Alpha of the building and then was split between Sides Alpha and Charlie of both buildings. This occurred after Safety 700 completed his 360° circle check of both buildings. When Safety 700 reached Side Charlie he found energized power lines on the structures and had a clear view of the gas-fed fire in the basement level and upper floors. He advised Command of these hazards, taped off the area, and directed crews to back away from the buildings. He remained on this side of the building to maintain safety with the power issue as well as ensuring that crews were outside of the collapse zone. Safety 700 and the officer from Paramedic Engine 724 were later used to check all three levels of Exposure Bravo for stability and to ascertain the feasibility of sending crews inside to start extinguishing hot spots. Safety 700 then remained on Side Alpha of Exposure Bravo to oversee the safety of crews assigned to the interior.

Triage Group - Supervisor - Paramedic Engine 707. Once it was realized that there were several patients a MCI was declared and Paramedic Engine 707 was sent to the parking lot of the Bestway Supermarket, as outlined below, to perform initial triage of patients. Triage eventually was placed under the supervision of the EMS Group Supervisor.

EMS Group - Supervisor - Originally given to Emergency Medical Services 701 and subsequently relieved by Battalion Chief 702 operating on talkgroup 71 Delta. A total of 39 patients were provided medical care and transported to local area hospitals. This included three firefighters transported for minor injuries. The EMS Group, as it expanded, also provided rehabilitation to crews needing relief and nourishment before being reassigned.

Rehab – Supervisor – Ambulance 716. Personnel were located in front of the EMS Group in the Bestway Supermarket parking lot.

Initial EMS Operations

Upon arrival of Fire/ Rescue units, police officers were walking several severely burned patients away from the building. Battalion Chief 884 initially directed the police to take the patients to the gas station across from 8701 Arliss Street as a casualty collection point (CCP) prior to triage being set up. As the MCI developed, all units encountering patients were directed to take them to the parking lot of the Bestway Supermarket on Piney Branch Rd, which is behind the gas station used as the initial CCP. This was used as the triage area. An EMS Group was established and placed on talkgroup 71 Delta.

An EMS Task Force was dispatched by ECC and units were sent directly to the Bestway Supermarket. The parking area there was far enough away from the scene to be a safe area, approximately one block, but still within walking distance. The parking area provided a large enough area to perform triage as well as treatment areas for red, yellow, and green patients. Additional EMS units were requested by the EMS Group Supervisor and provided as needed. Two Medical Ambulance Buses (MABs) were sent to assist.

More details on EMS Operations are addressed in the MCI Operations section of this document.

Command Team Operations

Initial Command was performed by Battalion Chief 701 from the Battalion Chief 701 vehicle. Battalion 702 and the Duty Operations Chief then arrived at the command post. Battalion 702 was utilized as the EMS Group Supervisor and handled the mass casualty portion of the incident, after initial consultation with Command. The Duty Operations Chief gathered information and started contact with other involved agencies. Upon the arrival of the Fire Chief and the Operations Chief, he assisted with the change of the command platform from the Battalion Chief 701 vehicle to Command Post 700.

The Fire Chief arrived on the scene at 0030 hours and began building out the command structure to form a Unified Command with MCP and the Office of Emergency Management (OEMHS). At this time, the incident was still led by Fire/Rescue supported by both of the above agencies. Preparations were made to set up shelter for the displaced residents at the Long Branch Recreational Center. The Operations Chief arrived on the scene at 0120 hours and served as the Fire/Rescue Liaison to the Unified Command. Battalion Chief 701 took on the role of Operations Section Chief. The Fire Chief and the Operations Chief both took time to evaluate the issues and performed additional circle checks. Command transitioned to Command Post 700.

At approximately 0200 hours, the first official Unified Command briefing was held at Command Post 700 and consisted of representatives from MCFRS, MCP, OEMHS, and the property management representative from the Flower Branch Apartments. The Fire Liaison worked with Washington Gas Light (WGL) and PEPCO regarding issues with exposure buildings on Piney Branch Road and Arliss Street. Following that, the Fire Liaison met at the Command Post with FEI, ATF, and MCP to discuss the plan for investigations. The TRT was called to stabilize the building in order to search for unaccounted persons, and to assist FEI and ATF with their investigations.

By 0300 the shelter was set up and ready to accept residents from 8701 and 8703 Arliss Street.

At 0415 hours, the Fire Chief held a press briefing with the media.

At 0600 hours, the Fire/Rescue role in Unified Command was passed to the Operations Chief and the beginning of a new work period was started with the oncoming shift.

After the first 6-hour period, efforts continued over the next several days to locate occupants and aid with the investigation. Days 2-6 are covered in the Technical Rescue Operations section. The scene was eventually turned over to the National Transportation Safety Board (NTSB) for further investigation; NTSB became involved because of its role in pipeline incidents.

Points for Improvement (Fireground Operations - First 6 hour period)

These points for improvement are for Fireground Operations only. Other points for improvement will be discussed in other sections of this document.

Water Supply

Water supply did not occur as efficiently as it could for several reasons including pre-planning. This building complex is run frequently and there is generally a plan between responding companies regarding water supply in this complex. The following issues contributed to the water supply issues on this incident:

1. There was some confusion regarding the secondary water supply. This confusion arose from the communication issues with Engine 834 appearing on the Mobile Data Terminal (MDT) in the units and the Computer Aided Dispatch (CAD) incident display as the fourth due engine. Prince George's County usually dispatches one unit per station on incidents due to staffing shortfalls. In this case, Truck 834 was dispatched on the initial alarm, as well as Engine 834. Only Truck 834 responded. The ECC dispatcher should announce any changes in running order over the talkgroup to ensure that all units and the incident commander are clear regarding what units are responding.

2. The dispatched address was incorrect and the corrected address was not relayed over the radio until later into the incident. First arriving units and command officers need to clearly announce address corrections.
3. There were unit officers who were not familiar with the complex or the water supply plan for this complex. Area familiarization is important for all personnel.

On Scene Radio Communications

Fire Ground Discipline and Accountability

Fire ground discipline must be maintained throughout an incident. It can mean the difference between life and death.

1. Freelancing - Freelancing is not an acceptable practice, is dangerous, and causes problems when trying to maintain accountability. Units must operate in the areas that they are assigned and not deviate.
 - a. The Incident Commander announced several times that operations were “exterior only”. Despite this order, crews operated inside the building, specifically in Exposure Bravo. It was later found by the structural engineer that Exposure Bravo was not stable enough to safely enter without shoring.
 - b. Units in staging “self-dispatched” to the fireground and were not available when Command needed them. There was only one unit that remained in staging, with their crew intact, until called for by Command.
2. Span of Control - There were some issues with span of control when as it pertains to the Fire Attack Group. Early in the incident, a chief officer was given this command function. Crews were operating on both Side Alpha and Side Charlie. It took the Fire Attack Group Supervisor some time to sort out which crews were assigned to him. Command should have broken groups into more specific areas and announced the units to the Supervisor. The Fire Attack Group should have been divided into smaller groups earlier into the incident create more manageable spans of control.
3. Accountability - Officers must maintain crew integrity. Group and division supervisors must maintain accountability of the units that are assigned to them
 - a. One crew member was operating inside Exposure Bravo without his crew and officer. He was found by other crews operating on the exterior at the Side Charlie window asking for help to get out. It was assumed that the path of entry was compromised behind him and he was unable to return the way he came. This could have been a mayday situation. If he had not been seen asking for help, he would have been trapped inside the structure and away from his crew. Command was never notified of this and it was first found out when reviewing the after-action statements from unit officers.

Strengths

1. Crews are highly trained and initial crews relied on that training to start the operations even though the Incident Commander had difficulty communicating the incident objectives due to too much radio traffic. The use of general practices from the policies and procedures on fireground operations also assisted with the initial actions of the crews.
2. Crews were able to quickly compensate for water supply issues and complete water supply to support the operation.
3. Situational awareness of the dispatcher proved valuable when the initial EMS Task Force was dispatched and with the use of the evacuation tone to assist the Incident Commander when calling for evacuation.
4. The use of the command team concept proved to be effective. Upon the arrival of the Volunteer Duty Operations Chief, a permanent Command Team was formed and operations were much more manageable in the initial command platform of the Battalion Chief's vehicle.

COMMUNICATIONS

Overview

Communications is one of the most critical parts of any incident. It is the key to operating efficiently. It is not just about the words used, but how they are used and whether the message is understood in the way that it was intended. While on scene communications have been discussed in the fireground operations section of this document, this section deals more with communications between the ECC dispatchers and the units on the fireground, and within the ECC.

There were dispatch issues, including a delay in response with mutual aid companies that were not communicated to Command. There was a high volume of radio traffic over the fireground channel and some transmissions were missed. Command was unable to convey parts of the Incident Action Plan to units on the scene.

The initial dispatched address and information was different from the actual location and type of building. The initial dispatch was for a report of fire from the third floor of a high-rise building at 8644 Piney Branch Road with a cross street of Arliss Street. The actual addresses of the involved buildings were 8701 and 8703 Arliss Street which are two garden apartment buildings that are attached on one side. This may have been due to the original 911 call coming from 8644 Piney Branch Road. The corrected address information came from units on the scene, later into the incident.

While units were en route to the call, the dispatcher provided additional critical information to Battalion Chief 701, which assisted in determining the scope of the incident. Initial information included the RID being sent due to receiving multiple calls for the dispatched address and that there was a report of partial building collapse. Subsequent information was that there was a report of people trapped on the second and third floors.

Mutual Aid companies from Prince George's County were dispatched on the incident but there was a delay in response due to dispatching of units that had no crew available. It is the procedure of ECC to only dispatch one suppression unit from each station. The dispatcher did not follow this practice and dispatched more than one unit from stations that did not have staffing. This happened on the initial alarm, subsequent alarms, and the EMS Task Force.

On the initial alarm Engine 834 and Truck 834 were both dispatched. The dispatcher recognized this mistake and changed the second vocal to reflect the addition of Paramedic Engine 712. Paramedic Engine 712 ended up as the fifth due engine and Engine 834 was not vocalized. Units on the scene, including the Battalion Chief, were

looking at their Mobile Data Computers (MDCs) to determine other responding units, as they did not notice the change on the announcement of the second vocal.

A Task Force was called for by Battalion Chief 701 prior to arrival based on the information of people trapped on the second and third floors. One engine and one truck were dispatched on the Task Force on 7 Delta, instead of the normal complement of two engines and one truck. These units were Engine 754 Bravo and Tower 718. The second alarm was requested by Battalion Chief 701 who was on the scene with Command. Paramedic Engine 718 announced they were available to respond as the second engine on the Task Force. They were told by the dispatcher to go ahead and that the second alarm was being started. The dispatcher did not notify Command of Engine 718 being placed on the call to support the Task Force.

Although a second alarm was requested, it was never actually dispatched as the dispatcher did not correctly process the call to be upgraded. In trying to correct the problem, the dispatcher exited the call in CAD and re-entered and correctly requested the upgraded dispatch. Unfortunately, CAD suggested units for a third alarm, which was dispatched and announced as a third alarm. It was unclear to Command why the third alarm was being dispatched, but no clarification was requested. Upon the arrival of Battalion 702, as the second Battalion Chief, Command requested an operator on 7 Delta to clarify with Battalion 702 the units on the greater alarms. Battalion Chief 702 was unable to obtain the appropriate units from the dispatcher due to the confusion with the second alarm not being dispatched.

Due to the unfolding MCI, Battalion 702 was reassigned by Command to lead the EMS group.

The chart below shows the dispatch of units on the initial alarms in CAD versus the audible/vocal announcement by the dispatcher. Units in red are units that failed to respond on the incident.

Dispatched Units

	CAD Dispatch Initial Alarm (23:54:34 hours)	Audio Dispatch Initial
Engines	Paramedic Engine 716, Paramedic Engine 701, Engine 702, Paramedic Engine 834 , Paramedic Engine 719	Paramedic Engine 716, Paramedic Engine 701, Engine 702, Paramedic Engine 719, Paramedic Engine 712
Aerial	Truck 716, Truck 834, Aerial Tower719	Truck 716, Truck 834, Aerial Tower719
Squad	Rescue Squad 801	Rescue Squad 801
EMS	Ambulance 716	Ambulance 716

	Rapid Intervention (23:56:18)	Rapid Intervention
Aerial	Truck 801	Truck 812
Squad	Rescue Squad 742	Rescue Squad 742
EMS	Medic 701	Medic 701

	Task Force (23:58:36)	Task Force
Engine	Paramedic Engine 724, Engine 754B	Engine 754B
Aerial	Aerial Tower 718	Aerial Tower718

Air Unit	Air 716	
Canteen	Canteen 705	

	2nd Alarm (00:00:51)	2nd Alarm
Engine	None	None
Aerial	None	None
Squad	None	None
EMS	None	None

	3rd Alarm (00:02:57)	3rd Alarm
Engine	Paramedic Engine 844, Paramedic Engine 707, Engine 801, Engine811B	Paramedic Engine 844, Paramedic Engine 707, Engine801, Engine 811B
Aerial	Truck 814, Truck 706	Truck 814, Truck 706
EMS	Ambulance 702	Ambulance 702

Due to the high volume of radio traffic, there were several “bonks” or times when a unit or Command keyed up their microphone and were unable to transmit, also known as a rejected transmission. The chart below illustrates the first 33 minutes and 33 seconds of the incident transmissions:

Total accepted transmissions	270
Total “bonks”/ rejected transmissions	330
Battalion 701 keyed the microphone	150
Battalion 701 accepted transmissions	84
Battalion 701 “bonks”/rejected transmissions	66
Battalion 701 total minutes of talk time within 33.33 minutes	10

There were a total of 600 attempted transmissions in the first 33 minutes. Of those, 55% (or 330) were rejected. Of Battalion Chief 701’s transmissions, 44% were rejected.

Aside from the issues that were presented, there were many things done well. As stated above, important information regarding the actual circumstances of the call were relayed early to the Battalion Chief by the talkgroup operator.

An EMS Task Force was dispatched early, as the call takers and dispatchers realized that an MCI was forming. This helped Command greatly during the initial phase of the call.

The talkgroup operator on the tactical channel assisted by offering to give an alert tone to evacuate the building after Command made several attempts to have units exit the building. The dispatcher’s situational awareness assisted Command throughout the incident by taking care of notifications and tasks that Command was not able to ask for at the time

From the Perspective of the Emergency Communication Center

There are some things that are noticeable when operating on the fireground when it comes to the interactions with the communications center. Most are only apparent to those within the center because their operations are independent of the fireground. Below are the observations of the ECC Supervisor regarding their operations:

Points for Improvement:

1. Call takers have a script that they follow when taking 911 calls. This script was not followed by the call taker because of the heavy volume of 911 calls coming into the center. Personnel must always gather the best information possible from each 911 call, especially the initial calls, rather than taking a large quantity of calls.
2. There was a breakdown in communications with the initial 911 caller and the call taker as to the nature of the incident. The caller stated twice that the building was on fire and the call taker asked if there was a transformer on fire.
3. There were double and triple dispatches of mutual aid companies that did not have the availability to respond with all units. When the mistake was realized, the correct units were vocalized, but units and Command were working from the CAD display. If there is a change between the first vocal and the second vocal, this should be specifically stated to Command and units responding and on the scene so that all personnel are aware of the change.
4. The dispatcher incorrectly processed the upgrade to a second alarm. As a result, there were no units recommended in the CAD system. The dispatcher made several attempts to correct the problem but was unsuccessful. He exited the call and re-entered to fix the problem. When he attempted to upgrade to a second alarm again, the third alarm units were suggested and he dispatched them. The second alarm was not vocalized due to no units being recommended, but a third alarm was vocalized. The third alarm was not called for by Command. This caused confusion at the command post.
5. The police dispatchers knew about the call prior to the first 911 call coming in because the off-duty police officer notified them by radio. This was not relayed to Fire/Rescue, which caused a delay in the dispatch of units.
6. The greater alarm units were responding on 7 Delta. Units assigned to the MCI were switched to 71 Delta for operations; however, there was no dispatcher monitoring this channel in the beginning stages. Units were calling the dispatchers with no answer.
7. For large scale incidents, it is recommended that a dispatcher be sent to the scene with Command Bus 700 to assist with on-scene communications. This

would assist the ECC in being better able to support other 911 calls and dispatches.

Strengths

1. Recognizing the magnitude of the incident, personnel were called back to the floor early to assist with the operation. This is important as many talkgroups were used and many 911 calls were coming into the center and operators were quickly overwhelmed.
2. Transfers were made early to assist with backfilling stations and subsequent alarms.
3. The most experienced personnel were moved into key positions to make the communications for the incident as smooth as possible.

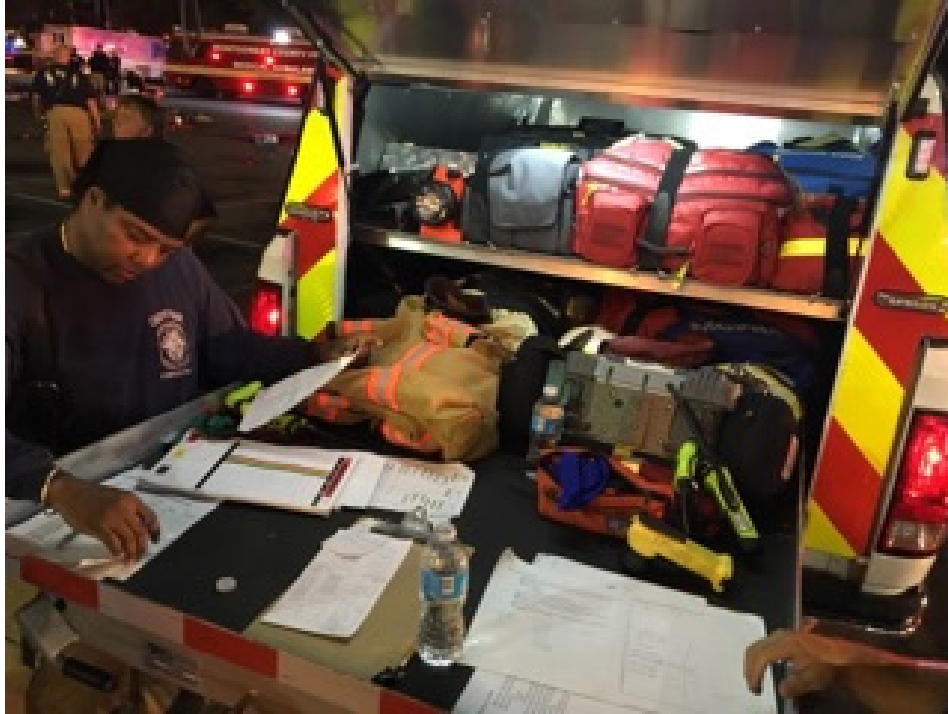
MASS CASUALTY INCIDENT OPERATIONS

Overview

The Mass Casualty Incident was first recognized by Command when the dispatcher stated that police officers were on the scene at the Bestway Supermarket with three people burned and several walking wounded. Emergency Medical Services 701 stated that he was on the scene and would set up a treatment area in the parking lot of the Bestway Supermarket on Piney Branch Road. Command sent Paramedic Engine 707 to assist with triage and treatment with Emergency Medical Services 701 as the EMS Group Supervisor.

An EMS Task Force was dispatched by the ECC. The units dispatched were Medic 712, Ambulance 712, Ambulance 701, Paramedic Engine 740, Medical Ambulance Bus 726 and Medical Ambulance Bus 830. Those units were switched to the 71 Delta Talk Group and the message was relayed to the EMS Group Supervisor.

As the number of patients grew, Command realized that a command officer was needed to manage this group. Battalion 702 was given this task by Command.



The rear of EMS701 was used as the “command platform” for the MCI

The EMS Group Supervisor requested additional EMS resources. The request was for two mobile ambulance buses (MABs), several EMS transport units and paramedic engines, and a second EMS duty officer. This was done via phone prior to arrival at the triage area because there was no radio time available on 7 Charlie. Prior to assuming the role of EMS Group Supervisor, Battalion Chief 702 notified the EMS Group Supervisor of the following units on the incident: Ambulance 702, Medic 701, Paramedic Engine 707, [Medical Ambulance Bus 726](#), Medical Ambulance Bus 722, [Ambulance 701](#), Ambulance 834, Ambulance 844, Ambulance 801, Medic 812, Paramedic Engine 841, Emergency Medical Services 703, [Paramedic Engine 740](#), and Truck 706 from staging.

The units in [blue](#) above were on the original EMS Task Force that was sent by the dispatchers prior to the phone call. In addition, Paramedic Engine 707 and Truck 706 were sent from staging to assist before this transmission.

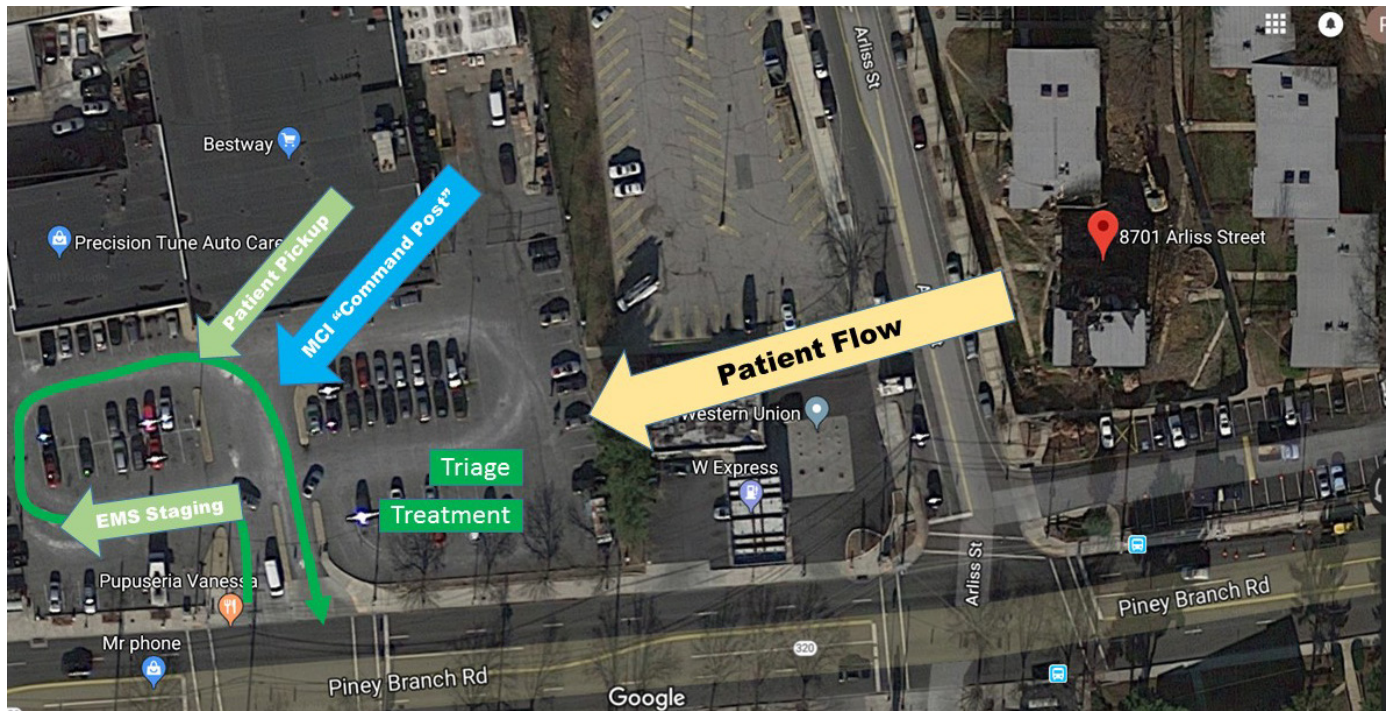


Diagram showing functional areas and traffic flow of the MCI.

Battalion Chief 702 received information from the ECC dispatcher advising that four of the units dispatched on the EMS Task Force – Ambulance 834, Ambulance 844, Ambulance 801, Medic 812 were unavailable or had failed to respond. This information was relayed to the EMS Group Supervisor by Battalion Chief 702 and it was stated that additional units could be requested if needed. The EMS Group Supervisor stated that no additional manpower was needed at that time.

Upon arrival to the triage area, Battalion 702 obtained a situation report from Emergency Medical Services 701, and assumed the EMS Group Supervisor's role.

The EMS Group Supervisor requested at least four Paramedic Engines and two additional Basic Life Support units to the treatment area to backfill those that had transported patients. Command then announced a significant MCI on 71 Delta and requested five Paramedic Engines, three Advanced Life Support units, and two Basic Life Support units.

Supplemental units dispatched to support the EMS Task Force:

- Paramedic Engine 703 Bravo, Paramedic Engine 706, Paramedic Engine 721, Paramedic Engine 723, and Paramedic Engine 725
- Medic 723, Medic 741, Medic 715, Ambulance 715, and Ambulance 742 Charlie

Staging for transport and manpower units for the MCI was established at the Flower Avenue side of the Bestway Supermarket parking lot.

Personnel from Ambulance 716 were assigned to perform rehabilitation (Rehab) functions. They were staged on Side Alpha of the Bestway Supermarket parking lot at the curb.

Patients continued to be triaged with several changes in priority when the mechanism of injury (MOI) was discovered which was sometimes delayed due to language barriers. Fifteen patients were transported to Holy Cross Hospital via Medical Ambulance Bus 726 with Paramedic Engine 740's crew providing patient care. Other patients were transported by ambulance to Washington Adventist Hospital, Children's National Medical Center, Med Star Washington Hospital Center, Suburban Hospital, Shady Grove Hospital, and Walter Reed National Military Medical Center. Per Maryland Protocol, Emergency Medical Resource Center (EMRC) was utilized as support to allocate hospital resources. Paramedic Engine 707's two paramedics were used as MCI Unit Supervisors, while the other two crew members remained assigned to Rehab. Various other basic life support (BLS) transport units were upgraded by Advanced Life Support First Responder Apparatus (AFRA) paramedics from the EMS Group. Three patients were also transported to hospitals via MCP prior to the establishment of the triage area.

The EMS Group continued to operate with dynamic resource staging. Some units were released when possible, however both civilian and Fire/Rescue personnel continued to arrive for several hours with new injuries or illnesses from smoke inhalation and orthopedic injuries that occurred at the initial incident that had worsened.

Patient tracking was time consuming and challenging. All patient identification had to be verified with receiving hospitals by phone after it was discovered that many were identified only by the bar codes that had been removed from the lower portion of the triage tags. This step may have been necessary regardless due to requests from Fire/Rescue and residents to determine whether missing people were transported.

The MCI operations were considered closed at 0403 hours with a total of 39 patients transported including the three transported by Montgomery County Police. An additional three patients were assessed and refused transport or were transported by personal vehicles. EMRC was notified that MCI operations were terminated. Remaining EMS assets were placed under Emergency Medical Services 701 and Emergency Medical Services 703 each designated as the EMS Group Supervisor during different periods.

At about 0400, Battalion Chief 702 reported to the Command Post to brief Command and to deliver information on patient status to FEI.

Points for Improvement

1. Consideration should have been made for the establishment of an MCI/EMS Branch, rather than an EMS Group reporting to Command. Branch-Level planning would have accommodated different objectives and enhanced operations with the geographic separation the EMS operations. Resources for the MCI operations should have been able to be requested directly to the ECC and not via Command who was also handling all other operations. The MCI operations was particularly complex and dynamic. Resource tracking was particularly challenging because transport units and paramedics leave the scene to transport to the hospital and some return to the scene later and are reassigned to other functions or used as staff. Units assigned to the MCI will not be on-site during transport. This became an issue when Command continued to request lists of units assigned, operating, or staged with the MCI. The establishment of an EMS Branch would have also assisted the original Command Team to be able to concentrate on resources and communications with the units on the fire. Attempting to manage two incidents from the same platform created confusion and lead to outdated information in the Command Post for the MCI units.
2. Some units were calling Command rather than the EMS Group. Likewise, Battalion Chief 702 sometimes responded or called himself Command. This complicated messages with the ECC and caused confusion at the Command Post, as they were monitoring 71 Delta. The Group Supervisor has the responsibility for circuit discipline within their own group and should identify the correct terminology within the Incident Command Structure.
3. Although the second Emergency Medical Services Duty Officer was specifically requested to assist with the MCI, there was confusion at the ECC. The dispatcher assumed that Emergency Medical Services 703 was to be used as another Advanced Life Support unit to provide service in the Battalion 1 area and advised him that he was not needed on the scene. This was resolved by the EMS Group Supervisor and Emergency Medical Services 703 responded to the scene.
4. Although designed to be paired with a Medical Ambulance Bus, no Mass Casualty Support Unit (MCSU) was dispatched with either Medical Ambulance Bus. Personnel from both Stations 26 and 22 believed the Medical Ambulance Buses were requested for Rehab rather than for the MCI, and therefore did not bring the Mass Casualty Support Units. When the EMS Group Supervisor requested the Medical Ambulance Buses, there was no request for the Mass Casualty Support Units. If the Mass Casualty Support Units are needed they should be requested or a possible Fire Chief's General Order can address the need for dispatch of the Mass Casualty Support Units for Mass Casualty Incidents.
5. The Transport Group Supervisor who was responsible for patient tracking only pulled the barcodes from triage tags and not the bottom stickers with patient names and information. This resulted in the inability to track any patient by name to a specific destination. Incident commanders or group supervisors should make

announcements that transport units must contact the Transportation Officer before starting transport. All personnel must be familiar with MCI processes including patient tracking.

6. While accurate tracking of patients is the goal and expectation, it should also be understood that there will be people not accounted for who are missing or deceased, or did not have contact with Emergency Medical Services. Other patients may have also been transported by alternate means during the incident. Personnel should expect family members and others to come to the scene and look for these persons. In this case, a Family Liaison would have been helpful. They should be staged away from the incident and family members could report to this group to identify where patients have been transported. Additionally, not every patient had an associated eMEDs report. There was some thought that there was no need for these reports for patients transported on the Medical Ambulance Bus. It is recommended that a Toughbook laptop and Maryland Institute for Emergency Medical Services (MIEMSS) Short Forms be placed on each Medical Ambulance Bus to assist with documentation for all patients.
7. Mass Casualty Incidents are particularly chaotic in the early phases. Local hospitals should be advised early to expect patients to arrive via alternate transportation (e.g. police, taxi, or private vehicles).
8. Some patients did not have eMEDS reports completed. There was confusion as to when they are required. A review of the appropriate reporting process should be done.
9. Emotions of relatives, bystanders, and other civilians were high and the situation had the potential to become volatile. No police were assigned to the MCI operations. Police should be requested to secure the treatment and care areas.
10. There were issues with personnel not following the direction of group or division supervisors. One example of this is the Rehab Group; some unit officers were "self dispatching" from Rehab without coordination between the Rehab Supervisor and Command. Another example is Medical Ambulance Bus operators; those personnel have specialty training and may give direction regarding patient tracking that is important to be followed by the EMS providers bringing patients to the Medical Ambulance Buses.
11. Rehab was being operating from Ambulance 716 and should have been transitioned to a location better suited for this operation. A Medical Ambulance Bus or Ride-on bus would have provided an environment that was more conducive to operating a rehab group and provided a cool area for firefighters to cool down before being redeployed.

Strengths

1. Triage tags, tarps, and ribbons were all used appropriately and immediately. This gave all patients a place to go to and helped with organization and accountability.
2. EMRC was notified early.

3. Communication with EMRC and hospitals was very well coordinated.
4. Hospitals were very accommodating of transport decisions.
5. Personnel remained focused entirely on the MCI and not on the nearby fire incident. This may have been due to the fact that they were operating on a different talkgroup and operated away from the fire scene.
6. Critical patients were quickly transported.
7. EMS units demonstrated strict unit integrity and operational discipline.
8. Logistics of staging and loading were well organized.
9. The use of the open area for the MCI management away from the initial explosion was good. This was initiated by MCP.

Recommendations

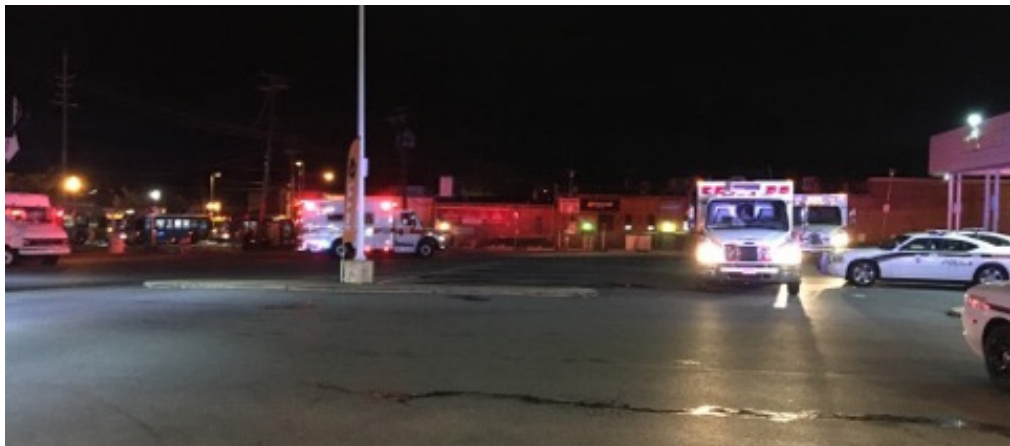
1. For MCI responses, a Certified Command Officer should be dedicated to lead the EMS Branch or Group, allowing the Emergency Medical Services Duty Officers to focus on the roles in National Incident Management System (NIMS) which require the most specific knowledge and training. This was used in this incident, as Battalion Chief 702 was assigned to this role once the MCI became more challenging.
2. Two Emergency Medical Services Duty Officers should always be dispatched on all large MCI responses (over twenty patients). If one is not available, the next closest back-up officer should respond. This may require a line up each day, similar to the Rail Officers. It was helpful to have the second Emergency Medical Services Duty Officer on this incident.
3. Train advanced life support providers on MCI command charts (see appendix) to assist with the Command structure or when personnel are used for scribes. These are currently only used by Battalion Chiefs and Emergency Medical Services Duty officers.
4. Determine a method to photograph patients or personal clothing and belongings to assist with patient identification based on best practices from other jurisdictions. This ability may already be available with new electronic patient care reports.
5. Update the Fire Chief General Order to clarify MCI responses to include the Mass Casualty Support Units on the initial dispatch. Include an officer with the response of the Medical Ambulance Bus. Some operators were not listened to by personnel regarding eMEDs reports because they were not an officer.
6. Train MCFRS personnel on the Medical Ambulance Buses and the Mass Casualty Support Units to enhance understanding of operations.
7. Establish a Family Liaison to provide information to families as to patients transported.



Operating at the back of EMS701



Medical Ambulance Buses



Transport units in the Bestway parking lot



The proximity of the mass casualty staging area and the fireground.

TECHNICAL RESCUE OPERATIONS

Overview

At approximately 0730 hours on Thursday August 11, the TRT was requested to the scene to assist with the ongoing operations. In conjunction with an on-scene structural engineer, the Technical Rescue Team Leader completed a structural assessment. Team members began efforts to stabilize many compromised portions of the structure. Subsequently, a search team element provided canine resources to determine the possibility of survivors within the rubble. Over the five operational periods, the TRT worked with investigators and law enforcement to locate and remove the human remains from the structure.

Operations

After an incident briefing, the TRT Leader and the lead structural engineer conducted an in-depth structural evaluation of both 8701 and 8703 Arliss Street. The intent of this assessment was to identify structural deficiencies and to determine the scope of work needed to provide structural stability to compromised sections of each structure. Additionally, remaining portions of each structure were assessed to identify potential ongoing concerns with visible hazards that could pose harm to rescuers and investigators. These hazard areas were marked accordingly and monitored throughout the duration of this incident.



Side Charlie Wall – Cracks and outward bowing noted
noted



Side Charlie Wall – Cracks and outward bowing



"Lean To" collapse – Side Alpha 8701 – unstable roof
Compromised



Bravo Wall – Separated 8701 & 8703 -



Interior Stairs – 8701 – Compromised



Interior load bearing URM Wall 8701 – unstable

Upon completion of the initial structural assessment, the TRT members were briefed on the objectives of this operation:

1. Operations were being conducted in the recovery mode as opposed to the rescue mode. This was specifically portrayed to ensure crews were not rushing through tasks and were using good judgment and clear thought processes.
2. Render the structure of both 8701 and 8703 as structurally safe as possible to ensure safety for those working in and around the buildings. This included both the rescue team and the investigation team members.
3. Locate and extricate victims as appropriate in conjunction with investigative procedure and documentation requirements.
4. Use caution in and around high hazard areas; continue to assess stability throughout the operational period. Pass on any new findings so they can be addressed as needed.

Utilizing the Federal Emergency Management Agency (FEMA) model, team members were divided into rescue squads and assigned work accordingly. The initial focus was the stabilization of 8701 beginning in the terrace level apartments and working up each level.

Due to the complexity of the incident and elevated outside temperatures, there was a need for additional personnel. It was decided that on-duty non-consolidated members, from non-TRT stations, as well as an additional 10 collapse certified members would be required to assist. Several team members consolidated and responded to the scene. Simultaneously, an off-duty team was assembled and brought to the scene for assistance.

During the first work period, another assessment was completed to determine future incident objectives and needs. At approximately 1230 hours, the TRT Leader met with all squad officers to discuss the future of this incident. It was clear that:

1. The full extent of the damage was not visible from the exterior. Many interior structural components were found to be compromised which added to the amount of work needed to ensure the structure was stable.
2. The overall incident objectives needed to be presented clearly.
3. Additional significant hazards were identified. Some hazards would be very challenging to address.
4. Because of the high risk, all operations had to be meticulous and deliberate.
5. This would become an extended operation and additional resources would be required.

The complexity of the TRT operation was explained to the Incident Commander along with the requirements to meet the known objectives safely. The Incident Management Team agreed that this would be an extended, multi-day operation.

At this point, TRT leadership reorganized, outlined future operational goals and objectives and began to plan for an extended operation. Crews were reassigned tasks and put back to work accordingly.

Operational Period – Thursday August 11

The following tasks were completed during the operational period

- Vertical shoring placed to support an unstable first floor at 8701
- Vertical shoring placed to support a compromised stairwell at 8701
- Removal of the Side Charlie wall which was significantly compromised in the explosion and subsequent collapse
- Interior raker shore placed to support a compromised interior load bearing wall with an inward bow
- Several T shores placed to support racked doorways and void areas
- Vertical shoring placed on floors one and two
- Ordered a 120 ton crane and man basket for future operational needs



T Shore & 2 Post Vertical – Stairwell 8701 - Terrace
Terrace



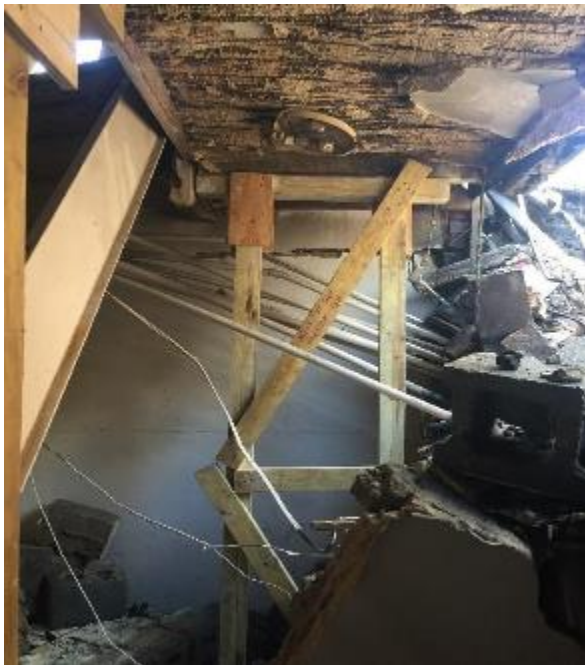
Strut to protect doorway / 2 post vertical – 8701 -



Vertical Shore / Raker Shore interior wall – 8701 Terrace



2-Post Vertical & T Shore – Second Floor - 8701



2 Post vertical – Stairwell – 8701 - Terrace

Operational Period – Friday August 12

The operational objectives for this period were:

1. Complete shoring on level two – 8701
2. Determine shoring needs in the terrace level of 8703 due to compromised columns and sagging floor structures
3. Remove the unstable roof structure on Side Alpha of 8701
4. Begin delayering operations in conjunction with the investigation team
5. Victim location and removal if applicable

One squad was assigned to the second level of 8701 to complete shoring needs, one squad was assigned to the roof removal operation and the third squad was assigned to the terrace level of 8703 with ATF representatives to address shoring needs and to begin the delayering process in this area of the structure. A measuring device the Total Station Monitor was used to aid in monitoring the building for any unwanted movements.

Up to this point, the TRT was staffed by on-duty personnel. Due to scheduling conflicts and station needs, staffing was changed to off-duty team members from the TRT and Maryland Task Force 1 (MDTF-1), MCFRS's FEMA Urban Search and Rescue program.

Upon the conclusion of this operational period, the following tasks were completed:

1. Shoring on the second floor of 8701 completed
2. Struts placed adjacent to compromised columns in the terrace level of 8703
3. Unstable roof section removed via crane of Side Alpha of 8701
4. During the delayering operations on the terrace level 8703 one victim was located and removed
5. Removed failing brick façade from Side Bravo of 8701 where it joins to 8703
6. Begin delayering operations in the terrace level of 8701



Terrace Level – 8703



2-Post Vertical –Second Floor rear unit - 8701



Roof Removal operation – 8701



Roof Removed - 8701

Operational Period - Saturday August 13

This operational period was staffed with off-duty TRT and MDTF-1 personnel which was a change from the prior days. Due to staffing shortfalls with off-duty personnel, Truck 725 was requested to assist as an on-duty asset.

The focus was to continue to delayer throughout the terrace level of 8703 in an effort to locate a victim known to be in this general area. Additionally, crews began to delayer on Side Alpha of 8701 in the area of the main stairwell.

Due to the amount of debris removed from the terrace level of 8703, a sagging floor above and compromised columns, additional shoring was required. Vertical shoring was placed in the terrace level of 8703 to offer a level of protection to all crews committed to this area of operation.

Crews operating on Side Alpha of 8701 made great progress with delayering efforts in and around the main stairwell. This required occasional breaching operations as well as many “picks” with an on-site crane. After the operational period, approximately 90% of the upper portions of the stairwell had been exposed.

Upon the conclusion of this operational period, the following tasks were completed:

1. Delayering throughout the terrace level of 8703 including the gas meter room and associated gas meters
2. Vertical shoring completed in the terrace level of 8703
3. Spot shoring placed to protect a sagging balcony on Side Alpha of 8701
4. Breaching of the concrete flooring near the Side Alpha stairwell of 8701



Shoring – Terrace Level 8703



Delayering Operations – Side Alpha - 8701

Operational Period - Sunday August 14

Off-duty TRT personnel assembled at Fire Station 31 and moved as a group with TRT resources to the collapse site. The operational period began at 0700 with a daily briefing and an outline of the operational goals and objectives. At this point in the operation, the focus was on delayering the collapsed area and addressing on-going concerns. Several structural issues were noted as delayering efforts continued:

1. Some of the initial vertical shoring was now loose due to loads being removed from the structure.
2. As more of the structure was uncovered, additional shoring needs arose. This was mainly in the terrace level of 8701 due to a failing interior unreinforced masonry (URM) wall.
3. The decision to transition from struts to wood shores was also a consideration.

One main goal of this operational period was to expose as much of the main stairwell of 8701 as possible. To accomplish this task, Rescue Squad 729 was requested as an on-duty resource specifically for the plasma cutter. Several steel structures were cut to free the upper two sections of stairwell.

Other crews assisted ATF investigators with delayering efforts in various locations throughout the rubble pile. A decision to add a vertical shore to the main beam in the terrace level of 8703 was made due to further assessment of the compromised columns in this area.

Upon the conclusion of this work period, the following tasks were completed:

1. Additional vertical shoring was added in the terrace level of 8703 and 8701
2. Additional vertical shoring was added in the first level apartment of 8701 adjacent to the failing stairwell wall
3. Delayering operations continued
4. Crane operations removed upper portions of the stairwell
5. Breaching including torch work



Removal of Stairwell Structure



Failing Interior URM Wall – Stairwell - 8701

Operational Period - Monday August 15

Upon the conclusion of the operational period on Sunday August 14, it was determined that TRT resources could down staff; however, a presence was still needed to monitor the structure and assist as needed.

During this operational period, a limited group of TRT personnel staffed the site to support ATF needs. TRT personnel assisted with on-going delayering operations throughout the rubble pile.

Upon the conclusion of this work period, the following tasks were completed:

1. On-going delayering operations
2. Light breaching using various materials
3. Prop build out of the wall that would be used for remounting gas meters

At a midday meeting with several ATF representatives, the Rescue Manager and the Incident Commander, it was determined that TRT assets would no longer be needed for this incident and the TRT demobilized.

Operational Goals & Objectives – Technical Rescue Team Rescue Manager

1. Render the structure as safe as possible for rescuers and the investigative team.
2. Provide closure to the families. Locate and remove victims appropriately.
3. Perform tasks correctly and safely to ensure no injuries occurred to rescuers.
4. Provide to rescuers and investigation team assurance of structural stability in working locations.
5. Assist the investigation team in meeting their goals and objectives.

Points for Improvement:

1. The TRT must develop a plan for large scale events similar to this one. This should include contingency plans for extended work periods over several days of operations.
2. Fire/Rescue personnel needed to balance the firefighter mentality of working straight through until the job is complete versus the investigation mentality of taking a very slow, systematic approach to provide an accurate investigation into the potential cause of an event.
3. The ability to fulfill staffing requirements was limited on some days. This resulted in limited rotations, lack of Rapid Intervention Teams (RIT) during points in the operations and a lack of personnel to complete tasks. TRT must develop a reliable call back procedure for personnel. This should include times when MDTF-1 may be needed to assist in managing the incident.
4. The TRT equipment cache does not fully support this type of incident. Per the ATF leadership, no fuel burning tools were allowed near the structure. All breaching, cutting and torch work had to be completed with electrical powered equipment only. Several times during the operation personnel were short on the appropriate tools and equipment needed to complete tasks. TRT cache shortfalls need to be addressed and would include enhancements that would better support a large scale incident.
5. Large scale incidents that involve multiple agencies require a unified command structure. This will help identify who the Incident Management Team is and what the leadership roles are for each entity. The unified command team needs to clearly communicate the incident objectives to all personnel involved in the incident to ensure all personnel are on the same page.
6. Outdoor temperatures were consistently above 95 degrees for all five days of operation. The TRT must develop a plan for operations in extreme weather conditions. Techgen gear is not ideal for high heat conditions. Issued uniforms may be more appropriate.

7. The TRT must develop an accountability program that will assist with the management of crew work assignments and ensure personnel accountability in a hazardous environment. This should also include plans for evacuations and how accountability will be checked when needed.
8. RIT teams should be considered during times when crews are working in unstable areas.
9. The assignment of a technical safety officer should be required on large scale incidents. This person should not be the incident safety officer and should be knowledgeable in the scope of work being performed.

Strengths

1. The Incident Command Team acknowledged the situational updates from the TRT leadership and supported the incident with the proper resources needed to ensure the objectives were completed correctly.
2. Crews were kept constantly informed on the current plan, objectives and operational goals.
3. TRT personnel integrated well with the investigation team. Team members communicated needs properly and through the appropriate chain of command.
4. Building monitoring and structural assessments were done continually. As issues arose they were dealt with when required to ensure the safety of all personnel working in and near the structure.
5. Crews operated for five days in and around a compromised structure during significant weather conditions. No injuries were reported throughout the entire operation.

CONCLUSION

The complexities of this incident were many: two buildings involved in fire with collapse, multiple rescues, a gas fed fire, electrical hazards, loss of civilian life, a mass casualty incident, multiple agency response, and several days of technical rescue operations as well as investigations. The points for improvement however, are the same as many other incidents throughout the Country. Accountability, fireground discipline, span of control, and communications can be found in most Post Incident Analysis and After Action Reports. We must focus on these areas to continually improve our operations regardless of the size of the department, number of personnel, career or volunteer, and location of the incidents. These areas enhance our operations and increase our chances for survival in dangerous circumstances.

The complexity of this incident combined with the clear need for accountability of personnel, span of control, and the collaboration of multiple agencies and jurisdictions lends itself to the need for the utilization and expansion of the Incident Command System. This practice should continue as the basis for the management of all hazards incidents.

This incident went well considering the plethora of challenges presented. A high level of training lent to the positive outcome of operations on this incident. Every incident has its challenges and we must continue to train for the worst case scenario so that when it is presented to us, we can manage it.