

1847 BROKEN BEND AFTER ACTION REVIEW

APRIL 4, 2022



After Action Review - Structure Fire

Always ask these five questions:

1. *What was our mission?*
2. *What went well?*
3. *What could have gone better?*
4. *What might we have done differently?*
5. *Who needs to know?*

EVERY TEAM.

EVERY TIME.

SO EVERYONE GOES HOME

INTRODUCTION

This After-Action Review is a professional discussion of an event. The objective is to identify successes and failures. It is a tool that leaders, teams, crews, and units can use to get maximum learning benefit from every incident or project. It is essential for firefighters to learn from mistakes and to capitalize on successes. It is considered a valuable tool in high-risk professions, where the smallest mistakes can lead to disastrous results.

An AAR is not a critique and not a forum to assign blame. It is an open, honest, and professional discussion for purposes of improvement.

The Occupancy

The residence at 1847 Broken Bend was built in 2000 and is in the Town of Westlake. The lot that this residence was built upon is almost one acre (0.9209). It is two-story residential structure with approximately 7,748 square feet located in the gated community of Glenwyck Farms.

The house was described on MLS as a classic design with modern updates and impeccable style. The entire home was recently updated in 2021 with an attention to style and quality. Sprawling floorplan includes a much-desired main suite downstairs along with another bedroom, a formal dining, plus a living room, a spacious office with custom built-ins and two other living areas. Upstairs has three bedrooms each with an ensuite bathroom, a living room, an exercise room and a media room. Resort styled backyard oasis features an amazing pool and amazing views (Zillow2021).

The residence was equipped with fire sprinklers that are in all levels of the residence, but they failed to operate due to being shut off by the homeowner. On roughly three sides (A, B, D), the structure is surrounded by large trees. The C side of the structure is where the pool is located. No exterior exposures are proximal to the residence. The residence has multiple roof ridges and valleys, with various accesses.

A detailed Fire Department pre-plan was not available to responders during this emergency.

The residence serves as a primary home for the owners and their adult daughter.

The residents quickly evacuated with the pet dog upon seeing heavy black smoke on the second floor. This small amount of family members in the structure made accounting for the condition and whereabouts an easy task for accountability purposes.

Front View - Alpha Side



Rear View - Charlie Side



The Situation

Dispatch Information:

On April 4, 2022, at 2138 hours, the following units were dispatched to the above address to a reported structure fire at 1847 Broken Bend:

Engine #481	Westlake FD
Medic #481	Westlake FD
Chief #480	Westlake FD
Engine #402	Southlake FD
Ladder #403	Southlake FD
Truck #401	Southlake FD
Battalion Chief 1	unknown who Dispatch meant to respond as BC

Note: Standard Response Plan for a structure fire in Westlake is as follows:

4 – Engines

2 – Ladders

2 – MICU's

1 – Battalion Chief

En-Route Information:

Alarm advised in-coming units that the caller was stating her house was struck by lightning and there was heavy smoke inside the residence.

Weather conditions:

A strong line of thunderstorms was moving through the area at this time which would be consistent with a lightning strike.



Radio Transmissions:

Time	Unit	Radio Transmission
2139	Dispatch	Initial Dispatch (see above)
2140	E402, M402	Enroute
2140	BC40	Enroute
2141	E582	Enroute
2142	Dispatch	Caller states lightning struck her house, and it is on fire with dark smoke filling up the upstairs and she is evacuating with her dog
2142	BC40	BC40 received
2143	M481	M481 On scene
2144	E481	E481 On scene – stand by for size up
2146	E481	E481 has heavy smoke inside, nothing showing on the outside, will be performing a 360, E481 has Broken Bend Command – moving operations to Westlake Fire Channel 3.
2145	E481	We will be in the offensive mode, moving to the Alpha side – front door for investigation.
2146	BC 40	E402 you may need to lay a line – they are in the offensive strategy
2146	C583	Add me to 1847 Broken Bend and I will be responding

2146	E402	BC40 can you advise if there is a hydrant near the house?
2146	BC40	E402 go ahead and come on up here -there is one beside the ambulance
2146	BC58	Add me to the Westlake call
2147	E481 to Command	No answer from Command
2147	L403	Level 1
2148	E481 from Command	I believe this is going to be in the attic, we need to make interior to the attic - we have smoke coming out of the eaves on Charlie side
2149	BC40	Command from BC40
2149	Command	I'm level 1 on the Alpha Side – across the street in the cul-de-sac – do you have an assignment?
2149	Command	Go ahead and assume Command and I will go interior with my crew and make our way to the attic access because it's in the attic. I'm going to need a second crew to come in with us.
2150	BC40	Received – BC40 assuming command
2150	Command	E402 - I need you to pull a second line and back up E481
2150	E402	Received – Pull a second line off E481
2151	Command	L403 from Command: Go ahead and spot your apparatus on the A/D side and would assist with water supply

2152	T401	On scene – we will go to the A/B – If that is OK?? No answer from Command
2153	E582	E582 is on
2153	Command	E582 – I need a primary search
2154	E481 to Command	Homeowner states everyone is out of the house
2154	Command to E481	Understand – homeowner states everyone is out of the house but I’m still going- to do a primary search just to make sure
2156	T401 to Command	Do you have an assignment?
2156	E481 to Command	Can you find the homeowner and ask them where the attic access goes?
2156	Command to E481	E481 Repeat your last
2157	E481	Can you find the homeowner and ask them where the attic access is?
2157	Command to T401	If you would – try to locate the homeowner and see if you can find a good attic access point
2157	T401	Received
2158	L403	Status change – Needs assignment

2158	Command	Go on deck - Alpha
2159	Command from E582	We will be doing a Division 2 primary
2200	Alarm from BC40	Be advised that I have assumed Command of the Westlake fire and if you would go ahead and strike me a second alarm
2200	Alarm from C481	Enroute to 1847 Broken Bend's Structure Fire
2201	Alarm dispatches 2 nd Alarm	<i>T581, M581, Engine from Grapevine, Engine from Trophy Club, and Chief 402 respond NETFIRE 2 – Structure Fire in Westlake at 1847 Broken Bend Dr, cross street is Shady brook Court – Fire box 1109</i>
2201	Command from T401	Yes sir -If the crew would go upstairs in the middle – take a right toward Delta – there is a theater room and there is a pull down to the attic access
2221	Command to E481	E481 from Command – did you receive that transmission from T401?
2221	E481	Go ahead
2222	E481 from Command	No answer from E481
2222	Radio communication from unknow unit	Garbled transmission– not understandable

2223	Command	Unit calling command- reidentify and repeat your traffic – <u>(No answer)</u>
2224	T401 from Command	Can you make entry and assist E481 with that attic access and also I'm unable to reach them
2224	Grapevine E 2	Grapevine E2 enroute to 1847 Broken Bend Dr. (Alarm states they are working on Westlake Fire 3)
2224	T401	T401 received – T401 is going to make access and assist E481
2224	Grapevine BC1	Grapevine BC1 enroute to 1847 Broken Bend Dr.
2225	E481	We have encounter heavy fire on the 2 nd floor and is exiting the structure due to low air
2226	Command	Received...T401 from Command – I need you to take E481's position on the 2 nd floor – <u>(No answer from T401)</u>
2226	Alarm from Chief 580	I'm out - 1847 Broken Bend
2226	E402 from Command	<u>No answer from E402</u>
2226	Alarm from Command	Utilities have been cut at this time, If you would – have TXU enroute to pull the meter
2228	Command from E481	I spoke with the homeowner and there is an attic access at the top of the stairs on the left in the media room – that's where we encountered the heavy fire at. Top of the Stairs there is an attic access next to the media room

2229	E481 to Command	All we need to do is change air
2229	Command to E481	Let me know when you are ready to go back in
2229	Westlake Alarm from Grapevine E3	Grapevine E3 responding to 1847 Broken Bend Dr.
2232	E221	E221 responding to 1847 Broken Bend Dr.
2232	T401 to Command	Yes Sir - We need ventilation like bad.
2232	Command – T401	Received I will have a fan put at the front door, but we will not be able to get on this roof
2235	Command	Units working on the 2 nd floor – be advised that I have reports that most of the peaks on the Charlie side where the lightning strike – there is a hole in the roof and they are seeing heavy heat coming out that hole
2235	T401 from L403	Are you ready for the fan?
2235	T401	We need something – Yes sir!
2235	L403	Received – turning on the fan now
2236	L403 to T401	Do you have an exit point?
2236	T401	I'm not sure about that
2237	L403 from Command	What is your assignment right now?
2237	L403	We are on Alpha Side – on deck
2237	Command to L403	If you would – I need you to access the area and find out the best way to ventilate to give them some help

2238	L403	Repeat your traffic
2238	Command to L403	I need you to find a way to vent – whether it's to do horizontal but try to find the best exit point to help them on the 2 nd floor
2239	Command from T401 Driver	Medic 402 was attempting to also do that corner – they thought they had a good window
2241	Command from T401	Yes Sir – we are encountering heavy heat, zero visibility
2242	M402 from Command	Are ya'll assisting L403 with vent?
2242	M402	That's correct – over here by the garage is going to be a good spot
2243	Command	Received – advise L403 that I am assigning ya'll to him to assist with the vent and let me know when that is complete
2243	L403	L403 received
2244	Command from E481	We are making interior
2245	L403 from M402	What is your location? <u>(No answer by L403)</u>
2245	L403 from M402	What is your location?
2246	L403	We are on 2 nd floor at the top of the stairs
2246	Grapevine E2 from Command	Go on deck Alpha (GE2 acknowledges)
2247	Alarm from T581	E581 on scene
2248	Bedford Air 151 responding	
2251	Alarm from T581	Did they give a staging location for the second alarm? Alarm – negative – they are working on FC3

2252	Command from Alarm	What's going to be the staging location for the 2 nd Alarm?
2522	Command	Standby
2252	Command from E582	We are unable to complete the Primary on Division 2 but we moved down to Division 1 now (Command acknowledges)
2253	T581 and E221 arrives	
2254	E221 from Command	Where are you parked now?
2254	E221	We are down here behind a Keller Quint and a Keller Medic – just about a half block away
2254	Command (to E221)	Received – Could you start staging – you will be the Staging Officer – let me know what you have in staging.
2255	T401	We are exiting the structure for recycle (<i>Command does not acknowledge</i>)
No Time Stamps by Dispatch after this time	Chief 481 on scene	
	L403 from M402	Do you need another vent hole on the Delta side?
	Alarm from Command	E221 will have staging
	Grapevine BC1 on scene	
	Grapevine BC1 from Command	Report to the Command Post (BC1 acknowledges)
	Command from T401	Yes sir – we have recycled and are waiting for orders

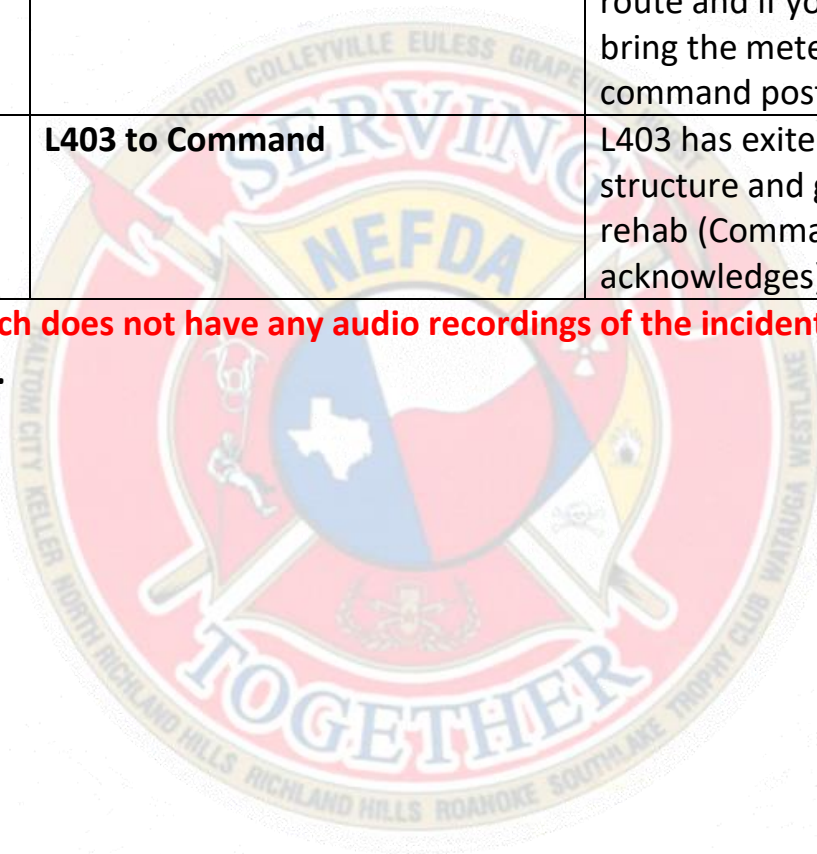
	Command to T401	You have recycled and if you are able to go back in – let me know
	Grapevine E3 on scene	
	T401	Unknown transmission..
	T401 from Command	Repeat your transmission – <u>No answer from T401</u>
	Command from Safety (C583)	
	Safety from Command	Go ahead
	Command from Safety	When you get the resources – recommend that you set up Charlie Division -
	Command to Safety	Received – that’s my next thing to do – can you confirm that the gas and electricity is shut off?
	Safety to Command	Received - standby
	Command from E582	Primary search complete on Division 1 – unable to complete on Division 2
	Command to E582	Understand – are ya’ll ready for another task or do you need to recycle?
	E582 to Command	Recycle – we have 2 bottles on the way.
	Command to E582	Received – let me know when you are ready for another assignment
	Command from Alarm	We have Tri County notified – would you like us to notify Atmos as well?
	Alarm for Command	Yes sir – that would be great
	Command from T401	Ready for assignment

	T401 from Command	T401 – if you could – make entry again and assist with fire attack on Division 2. If you need a third line – see if you can pull one of the truck or off of E481
	Command from Safety	Looks like someone has tripped the 150 amp main breaker but it looks like we still have power to the house – the meter is turning/running Command - Received
	Grapevine E2 from Command	No answer
	E481 to Command	We have exited the structure
	Command to E481	Received – you have exited the structure – are ya’ll rehabbing?
	Command from E402	E402 recycled and ready for re-assignment
	E402 from Command	Received – go ahead and make re-entry for fire attack
	E402 to Command	Received – making fire attack – Division 2
	E481 from Command	Give me your location and what your assignment is right now?
	E481 to Command	We are outside getting water
	Command to E481	Received – sticking you in rehab
	Command from T401D	-
	T401D from Command	Standby
	Command from E582	Ready for re-assignment
	E582 from Command	Go on-deck – Alpha – behind Grapevine Engine 2

		(E582 acknowledges)
	T401D from Command	No answer for T401D
	Command from E481	Can we have a medic unit here – I need a medic at the front door. I have a fireman here that is outside that needs to be looked at
	Staging from Command	Could you send me a medic to the front door – we have a ff that is needing assistance
	Staging to Command	I am sending Keller Medic 583
	Safety from Command	Could you go on the Alpha Side and ascertain how bad that firefighter is? (<i>Safety receives</i>)
	Safety to Command	Received – I’m at the front right now.
	Command from Staging	Correction – That will be Medic 581 Command acknowledges
	Staging from Command	You have 0 medics left in staging
	Alarm from Command	I need you to send me 2 ambulances to the staging area <i>Alarm -receives</i>
	Command from Safety	We are going to need medical attention for this ff on the alpha side – he unable to ambulate at this time
	Grapevine E2 from Command	Can you assist with that until we have an ambulance respond up here 9 (E2 receives)

	Grapevine E2 from Command	E2 – I'm going to make you Medical until the FF is transported out (E2 copies – Medical)
	Command from T401D	The power has been cut to the house by pulling the meter and the power to the house is Tri-County – if you can notify them
	T401D from Command	Received – Tri-County is en-route and if you could - bring the meter to the command post
	L403 to Command	L403 has exited the structure and going to rehab (Command acknowledges)

NETCOM dispatch does not have any audio recordings of the incident after this communication.



Command Narrative:

On 5/4/22 Westlake, Keller, and Southlake units were dispatched to structure fire at 1847 Broken Bend Dr. Westlake. All units en-route from their assigned cities. Storms were in the area and could have hindered response.

Additional information – homeowner said lightning struck her home and there is dark black smoke coming into the second floor.

M481 on scene. No size-up given.

E481 arrived on scene to find a Large 2-story residential structure with smoke on the inside, no smoke on the outside. E481 has command, doing a 360.

360 revealed – offensive mode pulling line inside for investigation. Smoke coming from the Charlie side, believed fire is in the attic.

BC40 advised E402 to stage at the hydrant for a supply line because they are in an offensive strategy.

E402 was assigned to position on the Alpha-Bravo side.

BC40 arrived on scene, staged in the cul-da-sac on the Alpha side. Advised command BC40 on scene, E481 passed command to BC40. BC40 assumed command. E481A advised they are going to need a second line inside to back them up. E402 pulling a second line off E481. BC40 advised alarm he was assuming command and requested a second alarm.

L403 spotting apparatus on the Alpha-Bravo and assisted with water supply.

Water supply established and then assigned on deck alpha.

T401 spotting on the alpha side. Was asked to speak to the homeowner to find out where the attic access is to assist E481.

E582 assigned primary search of the structure. E481 did advise that everyone is out of the house. A primary search was still to be done. E582 was not able to complete primary on second floor, started primary on the second floor. E582 reported primary on first floor complete, second floor not able to complete.

T401 advised where the attic access was but was then ordered to make entry to assist interior crews.

E481 encountered heavy fire on the second floor and exited the structure due to low air. T401 was advised to take E481 position on the second floor. E481 advised to where another attic access was as per the homeowner.

T401 asked for ventilation, high heat on the second floor. Crews inside were also advised of heavy heat signature coming out of the hole where the lightning struck. T401 recycled and made entry back into the structure.

L403 assigned ventilation, set a fan at the front door, and worked with T401 to vent the structure.

M402 assigned to assist L403 with ventilation.

E481 returned made entry back into the structure.

Grapevine E2 on deck Alpha.

E402 exited the structure on low air. Recycled and then made entry for fire attack.

E221 assigned to the staging officer.

Grapevine BC1 arrived and asked to come to the command post. BC1 was assigned to Charlie and requested resources to conduct suppression operations.

Keller Training Captain was assigned to be safety. Safety asked to make a Charlie division when resources would allow. Safety also advised that power still on to the house.

E481 exited the structure and went to rehab.

E582 on deck alpha.

E481 requested a medic to the front door for a down fireman.

Staged was asked to send a medic to the alpha side, M581 was sent to the front door. Staging also advised that they have no more ambulances in staging. Alarm dispatching 2 ambulances to staging.

Grapevine E3 was assigned to medical to assist with the treatment and transportation of the down firefighter.

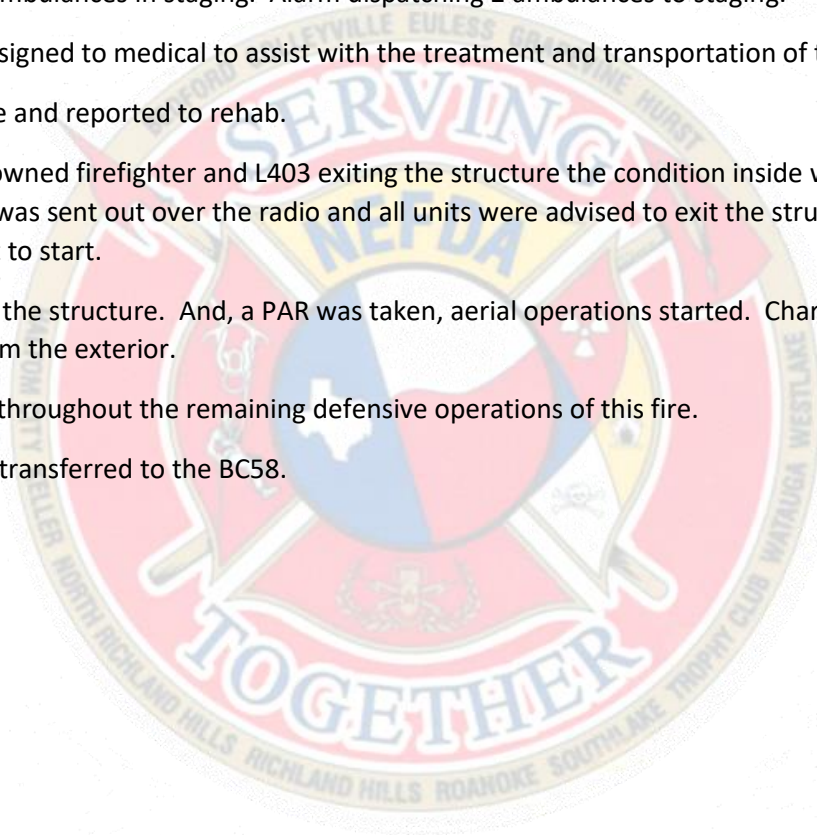
L403 exited structure and reported to rehab.

At the time of the downed firefighter and L403 exiting the structure the condition inside were getting worse. An emergency tone was sent out over the radio and all units were advised to exit the structure; defensive operation was about to start.

Once all units exited the structure. And, a PAR was taken, aerial operations started. Charlie Division began attacking the fire from the exterior.

Crews were rotated throughout the remaining defensive operations of this fire.

Command was then transferred to the BC58.



What worked well

1. Medic 402 recognized that the response plan was one medic short and self-dispatched. (*Based on the obtained radio traffic from NETCOM)
2. BC 40 recognized that the response plan was a BC short and self-dispatched. (*Based on the obtained radio traffic from NETCOM)
3. BC 40 recognizes that E481 is in the offensive mode and did not hear that a water supply was established and directs E402 on the radio that they may need to lay a line.
4. Apparatus placement was good. Two aerial apparatus were strategically placed on the A/B corner and the A/D corner of the structure. First engine on scene – E481 – obtained a three-sided view and left proper room for the above-mentioned aerial apparatus.
5. Staging procedures were followed, and personnel were very disciplined.
6. Mutual Aid cooperation by all Fire Departments proved invaluable to the positive outcome of this incident.
7. Four vehicles, one motorcycle was moved out of the garage area early in the incident.
8. A bottom-story room - containing over one million dollars of firearms was saved from the fire.

Areas of needed improvement

1. The initial dispatch for mutual aid did not include the full first alarm assignment. This delayed sending the most appropriate resources. It was short two engines.
2. First unit on – Medic #481 only stated “M481 on. A complete size up needs to be given.
3. If utilizing the Blue Card Command concept – the Initial Radio Report (IRR) must include the following:
 - Building Description (Size, Height, Occupancy type),
 - Problem Description (smoke and fire conditions) with location of the problem (very important),
 - Initial Incident Action Plan (IAP) with your company’s Task, Location, Objective
 - Declaration of the Inc. Strategy (Offensive or Defensive)
 - Resource Determination
 - Assume & Name Command
4. A continuous water supply line (connected to a hydrant) must be established by one of the first due engines on a structure fire. It can never be assumed to be in place by later arriving resources unless the supply is readily visible. A second continuous water supply line should be considered by the Incident Commander if the structure is large or aerial operations might be needed.
5. **Communications.** Throughout the incident, Command received numerous radio transmissions. Inevitably, there were some miscommunications.
6. The use of “would you, go ahead and other adjectives – are not needed and should be discontinued emergency communications. - Dispatchers will understand that during these incidents, please, would you, and thank you – will not be used. (Example: Alarm – strike a 2nd alarm) **Precise, short, and to the point communication.**

7. Second Alarm was dispatched – which included dispatching Chief 402 – There is not a Chief 402.
8. Dispatch did not include NEFDA Rescue 47 or the NEFDA Air Truck on the initial 2nd Alarm.
9. **Fireground Group / Division** designators were not consistently used after units were given assignments. With all the various agencies that were involved in this incident, it would have proven very useful to stick to Group/Division designations (i.e. Division 2 Fire Attack) for identification and clarity on expectation of assignments rather than individual unit designations (i.e. T401 or E481).
10. **Span of control** expanded quickly as the scene developed and was not effectively reduced until BC's arrived with the 2nd alarm. Units continuously transmitted directly to Command. Command was flooded with continuous high priority transmissions and was not able to easily manage the extreme demand of all the incoming transmissions. It should be noted that Company Officers were assigned as Division Supervisors but had to remain with their companies while performing fire attack. This meant that they were unable to spend time supervising the Divisions they were assigned.
11. **Need for Salvage EARLY** - Remove irreplaceable – Early in the incident, L403 and T401 were strategically placed for defensive operations. We should also look for additional crews as they arrive to start removing priceless personal effects such as pets, pictures, computers, video's, etc. that cannot be replaced if they are damaged. We should ask ourselves – Have I isolated and removed those things homeowners will require on a short-term basis: medications, cell phones, etc.? It is the ability to think like our customers and try to anticipate what things they would consider are priceless. If you are not sure, ask them..... While this is just another fire to us, it is one of the most significant events in their lives. Save those things they can't replace.

12. **Air Supply** – One firefighter interviewed stated “We were up on the second floor trying to find the fire when my vib-alert went off”. We had no visibility – so we (referring to himself and partner) began following the hose out. As we began following the hose – I realized that we had a lot of hose on the second floor – all in circles on the landing. As I continued to follow the hose – the “vib-alert” kept getting slower and slower, and I began to get really worried I wasn’t going to make it out. I then got off the hose and started to feel my way until I found the stair banister/railing, then I used the stair banister/railing to find my way to the stairs. I then hurried to the bottom of the stairs and exited the structure – the exact second, I ran out of air”

- **Task-Level Air Management** Individual firefighter air management is the foundation of this air management policy, no incident command system or structure can overcome a lack of individual firefighter air management. An effective air management policy requires leaving the hazard zone before SCBA low-air alarm sounds. This leaves an emergency reserve of 25 percent air capacity if an emergency arises. Firefighting operations, at all levels, should revolve around this standard.
- Personal accountability for the SCBA is critical. Firefighters must manage their assigned SCBA for the entire work shift. This requires thoroughly checking the SCBA before shift, after using it, and whenever its function is questioned. Firefighters are expected to know their SCBA’s air level before entering the hazard zone, during firefighting activities and upon leaving the hazard zone. This is called a “round-trip ticket.” The ability to monitor this supply during firefighting activities is a learned skill. Company officers should reinforce the importance of work cycles to their crews, and command and sector officers should ensure the work will continue when crews are relieved.
- Although, the individual firefighter is responsible for monitoring their air supply and communicating with the company officer, the company officer is responsible for their entire crew’s air management. They must be proactive and inquire about their crew’s air-level status; they can only address situations they are aware of. Communication is critical. Company officers should consider using standard benchmarks -

during an incident for regularly prompting crew for their air-level status.

- 13. Must have an Exit Strategy.** Low-air emergencies or other mayday events pose an extreme danger to firefighters involved in rescue efforts. Data obtained from training exercises after the Southwest Supermarket fire (Phoenix, Ariz., March 14, 2001) indicate that it takes 12 rescuers to remove one firefighter in a mayday situation. The data also demonstrated that one out of every five rescuers will also end up in a mayday situation and require assistance exiting the hazard zone. This creates a deadly cycle. Air management at all levels of command, as well as individual firefighter responsibility, is critical to prevent these situations. If members believe they or other members are in trouble, the call for a mayday should be immediate.

Fire crews operating inside structures should always have an exit plan. Although the company officer should communicate their exit plan to the crew, this is not just the company officer's responsibility. Individual firefighters are responsible for knowing the plan and how to execute it. The plan defines how the crew is going to leave their area of operation (hazard zone). The best plans have firefighters exiting the hazard zone by following the hose-line they came in with. This includes normal operations as well as emergency situations. The plan should include the entrance used to enter building, the dedicated hose-line, knowledge of other means of egress within the sector and other crews operating in the sector. This plan also includes the amount of air it takes to leave the hazard zone before the low-air alarm sounds. It can be very difficult to estimate the amount of air it will take to exit the hazard zone. It is safe to say it will take no less than the amount of air to gain this position. This assumes that no new obstructions are present and that conditions have not changed since gaining access. The exit time will be strictly dictated by distance into the building and the conditions experienced while leaving. The larger the structure, the more important and difficult the exit plan becomes.

All company officers should understand air management at all levels of incident command. This becomes critical when operating in the hazard zone. You must know your own responsibilities, as well as the responsibilities of the tactical-level boss and incident commander. This allows company officers to fit more clearly

into the system and manage their responsibilities more effectively; your crew's life may depend on it.

14. **Two means of egress (at least)** - During the incident at an unknown time – a 2nd means of egress was established on the Charlie Side. However, this was never “announced” to all crews on the fireground. If a mayday had happened, this could become another means of escape.

We need to look at ways to get ladders back as part of our arsenal of safety and efficiency list.

If operations are above ground – on the second floor – we should identify the area closest to the potential of a hostile event or structural fail and have additional ladders placed at windows – at a 65 percent angle for firefighter's egress. **All members** operating in that area shall then be notified via radio of the ladder placement and area. *Larger the structure – more ladders for egress.*

15. **Aerial/Ladder Operations during Lightning Storms** - During the incident, two aerial devices (T401 & L403) were used – with firefighters working on the aerial devices while lightning was in the area.

Fire Department should develop SOPs/SOGs that address fire operation safety during lightning storms.

Safety issues to consider are:

- When to raise or lower aerial apparatus, lighting masts, ground ladders.
- When to begin or cease roof operations.
- Staging all personnel not on active assignment inside a fire apparatus or a building and committing the minimum number of personnel to complete outside assignments.

Fire Departments should develop a method to inform the Incident Commander of actual or potential lightning strikes in the vicinity of an incident; this information will assist the Incident Commander in conducting a risk management analysis on scene.

Note: Lightning storms can travel 10 to 12 miles from a thunderstorm. This is often farther than the sound of thunder travels. That means if you can hear thunder, you are close enough to a storm to be in danger of being struck by lightning.





Lessons Learned

- Perform a continuous size up during an incident to maintain situational awareness.
- Obtain a visual of all sides of the structure.
- Identify the location of the fire.
- Keep radio communications clear and concise with use of clear text.
- Break up information into manageable pieces.
- Ask to repeat information, if needed
- Rotate crews often – 1 SCBA bottle recycle maximum?
- BURN TIME – Be aware of the length of time the fire has been burning.
- Adjust strategy and tactics if there is no improvement in conditions.
- Consider an Alpha Side Division Supervisor for company's on-deck or RIT - This supervisor can maintain resource accountability and communications with the deployed company and the IC.
- Include the Thermal Imaging Camera in all tasks – i.e., Fire Attack, Search, 360, RIT or on deck.
- Train with the TIC to maintain operational proficiency.
- Have a dedicated Ambulance and Crew available and close to the scene for injuries. One firefighter received a broken ankle and was transported to local hospital during this incident.

- Mayday Prevention. “A majority of fireground LODDs occur because units are located **IN** offensive positions **during** defensive fire conditions” A need to always perform a thorough size up and always operating in the correct strategy. This needs to be done by all - ***Especially the Company Officers that are working inside the structure.*** Interviews of several on-scene firefighters for this AAR was conducted. Most stated they were glad and also surprised that they got to stay in as long as they did to try to gain control of the fire.
- We cannot prevent every bad thing from happening to us on the fireground. But we can **maintain situation awareness**, we can properly train, and we can have the best equipment. When things go bad, we will need air to survive. Make sure we have enough air left in our tank to get us out if something bad does happen.
- Always have an Exit Strategy.
- Always re-evaluate - Risk vs. Reward
- **Spray Foam Insulation** –Spray Foam is sprayed on from below and inside the attic space to cover/insulate the entire roof system. When the fire enters attic space, the spray foam chars and becomes a solid structure. What does it mean to the fire service?

Does it mean:

- ✓ Longer to self-ventilate through the roof?
- ✓ Traps in more heat – making it hotter for the firefighter working under the attic area – (high heat, unable to locate the fire?)
- ✓ Collapse potential with no warning?

Remember the 16 Radio Communications that when combined, will often lead to a mayday:

1. "We have zero-visibility conditions"
2. "We have fire above our heads"
3. "We have fire below us"
4. "We need more line to reach the fire; extend our line"
5. "We have not found the seat of the fire"
6. "We are running out of air" (or indications of a "low air alarm")
7. "This is a hoarder structure"
8. "We have had a ceiling/roof collapse"
9. "We have had a flashover"
10. "We have lost multiple windows"
11. "It's really getting hot in here; we are backing out"
12. "Our exit has been blocked"
13. Interior: "We are sending a firefighter out with a problem"
14. "We have a hole in the floor" or "We have had a floor collapse"
15. "Command has lost communication with multiple crews"
16. We have a lot of sprinkler heads going off in here"

"A good firefighter knows how; an educated firefighter knows why"