



After Action Report

5114 Mesker Park Drive

Single Family Residential Structure Fire

November 27, 2017

MayDay

Fire Chief Michael Plumlee

Page Intentionally Left Blank

Reader,

I want to thank everyone who contributed to the development of this After Action Report. Fortunately, no firefighters were injured during the fire suppression operations at this residential structure fire. The close call on this event has created a significant learning opportunity. The lessons learned can save lives in the future. The recommendations in this report are pertinent and appropriate. It will take significant effort to accomplish the recommendations in this report including the additional training requirements.

Please take the time to read this report and understand the dangers associated with fire department operations.

Michael Plumlee

Fire Chief

German Township Volunteer Fire Department

Page Intentionally Left Blank

German Township Volunteer Fire Department provides fire protection services to approximately 10,000 citizens. The service area is suburban and rural. The service has both a municipal and rural water system. In the municipal water system hydrants are provided at a minimum of every 1000 feet. In the rural water supply area hydrants are sporadically spaced.

The Department is comprised of 40 active volunteers usually on home response. During weekday/daytime hours the departments staffs one of the 2 fire stations with 2 part time firefighters.

Apparatus - 2 - Engines w/ 2400 gallons of water / 1 - Tanker 2000 gallons of water / 2 - Rescue Squads / 1 - Brush Rig / 3 - Command Vehicles

Fire Stations - 2

Administration Building

The Department is led by:

Fire Chief	Michael Plumlee
Assistant Fire Chief	Jesse Marx
Division Chief	Tamara Carr
Division Chief	Heather Henry
Division Chief	Rick Schnautz

Chief and Assistant Chief are elected every two years. The Board of Directors makes a recommendation to the membership. The membership votes yes/no on the nomination.

Other officers are promoted based upon a competitive process. This process includes a point system that includes:

- years of service
- written examination
- certification levels

Captains and Lieutenants are promoted using the department promotional process.

The department responds to approximately 700 responses annually.

First due working structure fires occur less than 10 times annually.

Mutual Aid

Perry Township VFD - all volunteer / 8 miles

McCutchanville VFD - 4 full time daytime staff / volunteer / 4 miles

Scott Township FD - 6 full time daytime staff - full time Fire Chief and Training Chief / 12 miles away

Marrs Township VFD - all volunteer / 14 miles

Wadesville VFD - all volunteer / 14 miles

Page Intentionally Left Blank

Executive Summary

While operating at an attic fire in a 3900 square foot 1 and 2 story residential structure Command called a mayday after a backdraft in the attic space. There were 3 firefighters operating within the structure on the first floor pulling the ceiling to access the attic fire. The crew were at the seat of the fire. The fire continued to grow as water was being applied at the seat of the fire and not gaining control. After the backdraft Command was unable contact the interior crew via radio. The interior crew had lost the one radio they had with them when it fell off the fire coat pocket. The crew was found in the family room on the C side of the structure after a firefighter force the door. The crew evacuated the structure unhurt. The crew was aware something had happened in the structure because several interior doors slammed shut. They were unaware a backdraft had occurred and the crew was unaware a mayday had been called by command because they were unable to be contacted via radio.

Fire Chief Michael Plumlee asked for a after action report be developed. The purpose fo the after action is to gather the facts of the situation to learn from the experience and recommend appropriate action to improve future operations.

This report is not trying to place blame. This report is identifying what went right, what could be done different and if presented with similar circumstances what would the appropriate decisions to be made.

Principal Author

John M. Buckman III Former Fire Chief

External Reviews/Contributors

Eddie Buchanan	Assistant Chief	Hanover County Virginia
Dale Saucier	Chief of Training	White River Township Fire Department
Brian Kazmierzak	Battalion Chief	Penn Township Fire Department

Report contributors

Michael Plumlee	Fire Chief
Jesse Marx	Assistant Chief
Deavron Farmer	Former Division Chief of Training
Tamara Carr	Division Chief
Ryan Bosecker	Lieutenant
Chris Taylor	Firefighter
Nick Eickhoff	Captain
Brian Spaetti	Former Captain
Sean Farmer	Evansville Firefighter
Leslie Buckman	Deputy Director - Central Dispatch
Kerry Nurrenburn	Telecommunication
Nick Raber	EFD Firefighter

Page Intentionally Left Blank

On Duty Staffing at time of fire

4 firefighters were on station when the alarm was received.

Firefighter 1 Colton Blanchard / 5 years experience / certified Firefighter I, Firefighter II, Hazardous Materials Awareness, Hazardous Materials Operations, Technical Rescue Awareness. Colton is employed as a career firefighter.

Firefighter 2 Nick Eickhoff / 5 years experience / certified Firefighter I, Firefighter II, Hazardous Materials Awareness, Hazardous Materials Operations, Technical Rescue Awareness. Nick has served as a Captain for 2 years.

Firefighter 3 Ryan Bosecker / 5 years experience / certified Firefighter I, Firefighter II, Hazardous Materials Awareness, Hazardous Materials Operations, Technical Rescue Awareness. Ryan has served as a Lieutenant for 2 years. Ryan is employed full time as a Industrial firefighter.

Firefighter 4 Chris Taylor / 4 years experience / certified Firefighter I, Firefighter II, Hazardous Materials Awareness, Hazardous Materials Operations, Technical Rescue Awareness. Chris has been employed full time as a Industrial firefighter.

Incident Commander Deavron Farmer has served 30 years with the German Township Volunteer Fire Department. He served 15 years as a Division Chief responsible for training and professional development.

Volunteers on home response

Situation Facts

- 4 firefighters on station at time of call. There are 2 part time firefighters normally on duty during weekday daytime hours.
- Engine direction of travel prevented the 1st due engine to gain access to property using the driveway.
- Wind direction of 12-16 mph with gusts of 22 not considered in the strategic decision process.
 - o Wind speed not considered as it relates to fire growth and its possible acceleration of the fire.

Attack

- Interior crew deployed inside a structure without completing a 360 degree exterior size up.
 - o Crew completed about a 270 degree exterior size-up
 - o Interior crew deployed inside a structure without backup.
 - o Pump operator and command could have met this requirement but were not in SCBA and the location of the Engine would not make this practical.
 - This concept of having command prepare to act as a firefighter has proven as an ineffective means to make operating in IDLH safer.
- Initial attack line does not make a difference with initial application of water.
 - o Crew did not recognize water application not overcoming BTU production.
 - Wind speed not recognized as a factor to escalating fire growth.
 - o Additional line could have been added when appropriate personnel arrive.
 - o Offensive attack through the gable ends may be considered a more appropriate tactic initially until more help arrived.

Ventilation

- Horizontal ventilation was conducted because of wind speed and direction not under control of the fire department.
- Vertical ventilation MAY have helped reduce the potential backdraft condition, inadequate staffing eliminated this tactical deployment option.

Communications

- Each member of the attack crew did not have a radio. They had access to the radios but chose not to pick them up.
 - o Every personnel operating on the scene should have a portable radio in their possession.
 - o If budgetary constraints doesn't allow then everyone operating within the IDLH atmosphere should have a radio.
 - o Personnel should train in the use of radio straps worn under PPE and this action doesn't allow for radios to fall out of the radio pockets.

Command Structure

- Get someone to the Charlie Side of structure to be commands extra eyes.

A safety officer needs to be established early into the incident.

 - Safety officer could become the RIT officer during rescue and recovery.
- Span of control consideration is critical for adequate supervision.

Staff

- Highly trained and competent in basic skills.
- Limited experience in size up, strategic decision making, tactical deployment options.
 - o Limited years of service/experience for those on 1st due apparatus.
 - o Accountability system needs to be used.
 - o Consider limiting POV response.
 - Recommend limiting POV response to scene due to accountability issues.

Overall Recommendation

Increase firefighters awareness of the limitations created with limited staffing that require a modified strategic and tactical approach to fire suppression operations.

Command and all staff recognize when an interior operation will make a difference and when it will not.

Adopt a more aggressive thinking process that analyzes risk vs. gain.

Decision making on strategy and tactics take into account:

1. Size of the fire
2. Ability to access the structure and the fire
3. Staff capability and availability

Apparatus/Equipment/Personnel Response

8E9	4	Firefighters	4A1	1	Scott Township Fire Chief
8E8	2	Firefighters	7E1	4	Firefighters
5E10	2	Firefighters	7L1	4	Firefighters
5E15	1	Firefighters	6E2	2	Firefighters
8A2	1	Assistant Chief			
8A4	1	Division Chief	POV	6	Firefighters

Situation Upon Arrival

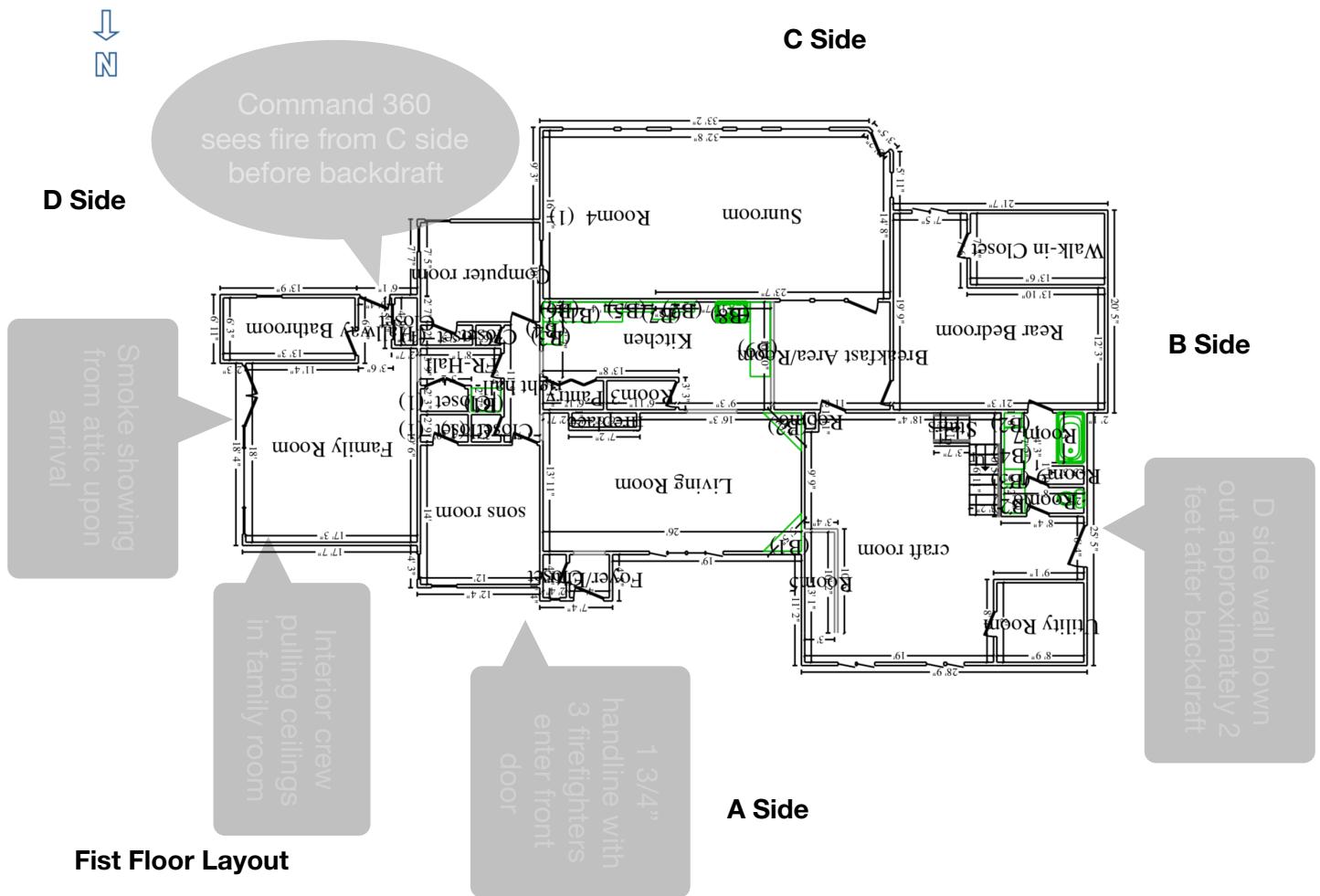
8E9 on scene with a 2 story residential structure with smoke showing from the attic. Command marked this as a working fire while enroute to the scene due to multiple calls. Because the driveway was narrow 8E9 was not able to gain access to the property. Subsequently, 8E9 had to park on the street and hand stretch a 150' - 2 1/2" supply line, attach a gated wye and an additional 200' - 1 3/4" attack line.

The crew attempted an external size up. It is estimated they completed about 3/4 of the exterior size up before deciding to begin putting water on the fire from the interior. Command was transferred and a 360 degree size up was completed. This size up brought up concerns about the size of the fire, crew access to the seat of the fire, rapidly changing smoke conditions. Command contacts the interior crew to determine their status. Interior crew says they are at the seat of the fire. Command is not seeing progress and is about to order evacuation when a backdraft occurs. The pressure from the backdraft dislocates a portion of the wall on the B side. The pressure also dislocates several windows on the A side. The interior crew does not respond to radio requests. Command declares a mayday. The photo below is a simulation of what the initial crew saw upon arrival.



Timeline

12:02:26 Dispatch report of a house fire
12:05:08 Flames visible from the eaves - relayed from dispatch before arrival
12:06:17 Working fire procedure activated by dispatch
 McCutchanville has a crew of 3 enroute to assist / 4 minutes out
12:09:37 Arrival (first unit on scene 8E9) smoke showing size up from the street
12:15:04 Homeowner advises "everyone is out"
12:16:08 Command Established by 8X19
 Command asks "Are you at the seat of the fire"
 Interior response "Fire is right above us"
12:18:42 Command Orders Interior to Exit the Building
12:20:05 Time of mayday (documented as "Fire Fighters Down")
 Command requests "Evacuation signal"
 8A2 "Asks if people are trapped inside"
12:20:09 AMR is clear on firefighter down
12:24:12 All Firefighters Out (documented "All Firefighters Out & Accounted For")
 2 ambulances continue will be on standby
 Defensive fire declared by Command
 6E2 requesting assignment repeatedly
12:25:57 Confirming all firefighters are out
 Charge the blitzfire
 Rear sector needs staff for backup on the Charlie side
12:33:30 Tamara Carr has command requesting Vectren / both
 7A70 arriving
 Command declares staging tree in front yard
 8X32 can you pump 8E8
12:33:40 D side is not accessible for walking / wall is going to fall



Residence information

Built in 1950
 Type 5 wood frame construction
 7 add-ons over the years (per the homeowner)
 Plaster lath interior wall construction
 Roof and ceiling construction of rafters not trusses

First floor	2874	square feet	Second floor	677	square feet
Basement	1692	square feet	Total heated area	3850	square feet
Hydrant #1	North	800 feet	Hydrant #2	South	200 feet

Interviews - conducted with personnel who were involved in the situation.

Deavron Farmer Incident Commander

Command was passed to him upon arrival by Captain Nick Eickhoff. Did a 360 in about 2 1/2 minutes. Did not like the pressure of the smoke or the color as he was going around the building. He was saying to himself "I don't like the looks of this. It is time to get them out."

He had seen the hose going in the A side door jerking so he knew water was being applied to something but nothing good was visible from the outside. He asked the interior crew if they were at the seat of the fire and they said yes. It is at this point Command started to request a status of the interior crew. Command requested multiple times via the radio with no response.

At about that time when the explosion occurred. The explosion blew out the wall on the B-side about 2 feet. From probably 20 feet from the A side and almost knocked his helmet off. His brother Sean an Evansville Firefighter was in the front yard and he ducked and covered because of the explosion. The ground shook. They both looked at each other and said what just happened? It was that time the Brian Spaetti a 10 year former Captain and member said to declare a may day. Deavron declared a Mayday. It was also at that time that Brian Spaetti said to Deavron "I think we just lost three firefighters" and Deavron agreed.

Captain Eickhoff had turned off the gas meter as I was walking up and he passed me command.

"I swear my blood pressure was 300/200." I was just talking with the interior crew and in an instant I couldn't get them to answer me. As soon as I told the crew to evacuate and got no answer we had a backdraft that blew several of the walls out at least 2 feet and simultaneously slammed the front door shut that they went in. I felt like I was going to be doing three fatality reports

Command Knowledge of Situation

1. Three interior firefighters.
2. Crew NOT at the seat of the fire.
3. Conditions getting worse, started calling interior crew to EXIT! (12 times)
4. Backdraft occurs,
5. No one dressed or packed up on the outside.
6. Rapidly deteriorating conditions.
7. Backdraft.
8. Loss of contact via radio with interior crew.
9. I would hope everybody would make the same decision or one close to it.

Sean Farmer

Sean tried to locate the firefighters through the front door no success. He went around to the back door kicked in the back door and about 10 feet inside the back door he found the three firefighters who were totally unaware of the situation or what had occurred. Ryan Bosecker a Firefighter who had the radio said it had fallen out of his pocket and he could not find it inside the building.

Nick Eickhoff, Captain

Captain Eickhoff was driving E9 from the Saint Wendel Road fire station. He pulled up to the driveway but could not make the turn because of the gate, it was narrow and the angle was toward the back of the Engine.

Nick pulled a 2 1/2" hardline toward the building because he was over 300' away from the structure. He attached a 2 1/2" to 2 1 1/2" gated wye to the hoseline and then stretched 200' of 1 3/4" toward the fire building. The remaining crew members were conducting a size up and talking with the homeowner.

When E9 arrived fire and smoke were coming out on the south end just beginning to come out of the gable end of the roof. It appeared to just start burning through the roof. A little bit of smoke and fire coming out of the gable roof opening. Colton and Ryan started walking up to check and see if there was anyone in the house. Dragged a 2 1/2" all the way up there because it couldn't reach the house with a 1 3/4".

Got the pump in gear. Set the pressure and then helped McCutchanville get a second line down for attack purposes.

First time that I have had to park that far away. Stretched the 2 1/2" and were still 50' short. We don't train for that. The next time we train at Company 8 maybe we park the Engine around the front of the station.

Chris Taylor, Firefighter

When we got the line charged. Went in the front door. Like go in and weave back and forth maybe the living room or the bedroom. They had light smoke but no fire visible. They were standing there kind of smoky but not smoky enough that they couldn't see and could see daylight out the windows. Poking holes in the ceiling to get to attic and spraying water on the fire. Nick was on the north side helping McCutchanville get in the neighbors driveway took the hose over the fence. Standing between the house and the fence was just enough to get a car through. They were getting the hose over when the attic flashed. Blew the wall out on that side. Why do you think it flashed? When they opened it up I guess it gave it lots of air. Deavron called it a smoke explosion. Not heard of a smoke explosion blowing out the wall. Could it be a backdraft? The fire was in the attic had plenty of air.

Something exploded on that one end on the d side and blew the brick off the side.

When it happened sucked all of the doors shut. Rapid pressurization is an indicator of backdraft. The pressure slammed the front door shut and pinched the 1 3/4" handling between the door and the jamb. After he heard the explosion Deavron tried to get the guys on the radio. Ryan had lost his radio.

Sounded like a ceiling fan fell. Sean kicked in the back door in and found the guys about 10' inside the back door. They were unaware of the situation.

David Bretz Former GTFD Chief

Interior crew had no awareness a backdraft occurred in another section of the structure.

Deavron read the fire well and was 100% correct in calling for the evacuation and calling the mayday after the backdraft. The fact that no one inside had any idea that anything was going on coupled with the fact that no one got injured should by no means make anyone think that this was not a nearly deadly event. As a matter of fact the mere idea that they did not know what happened tells me that Deavron and Sean saved three lives. The interior crew would have continued to operate inside had the Farmer brothers not been on their A game that day.

Ryan Bosecker - Lieutenant GTFD

First due crew member on Engine. Did not think the fire had progressed as rapidly as it had from an interior perspective. Some difficulty gaining access to the attic fire space due to plaster/lath - legacy construction. Did not realize the house had been added on to as many times as was found out after the fire. The remodel/add-on construction features created access challenges. When backdraft occurred the interior crew felt a shaking for a very short time but thought it was someone forcing entry through a door.

Recommended Actions To Be Taken As A Result of gEvent

1. Training
 1. Develop a hands-on model that attempts to raise awareness of the tactical tools available for fire suppression operations.
 2. Develop an assessment tool to determine the experience level of current members.
 3. Conduct command simulation training quarterly for persons who may become incident commanders.
 4. Develop a training program for persons who may become incident commanders.
 1. Deliver the training program annually as a refresher.
 2. Deliver the training for new promoted officers within 3 months of promotion.
 5. Develop and conduct training for incident commanders:
 1. Situational Awareness
 2. Conducting Sizeup
 3. Decision Making
 4. Determining an appropriate strategy for a given situation.
 5. Determine the implementation of the strategy through appropriate tactical operations.
 6. Utilize to the fullest extent current technology in the delivery of this training.
 6. Determine the appropriateness of allowing non-certified firefighter's to be involved in the initial interior fire suppression operations.
2. Command Experience
 1. Trust your gut - while completing the 360 degree size up Command did not like:
 1. color of the smoke
 2. velocity of the smoke
 3. found heavy fire coming from the attic space on the C side
 4. contacted interior crew to see if they had made the seat of the fire
 5. decided to evacuate the structure

3. Establish clear expectations through training on when to make an interior attack.
 1. Risk vs Reward.
 1. If there is no life safety issue do we create one by going interior?
 2. Proper amount of staffing will reduce many of the hazards the firefighters face.
 1. Experience is an unfriendly teacher.
 1. Seasoned firefighters will not always be on the initial scene.
 2. Offensive attack
 1. Does not always mean from the interior.
 2. Applying water from the right position.
 1. Offensive attack from outside the building as well as inside the building.
 2. Offensive attack on this fire could have meant vertical ventilation over the room they were operating in.
4. Mayday policy
 1. Establish a current policy
 2. Train to the policy for all Suburban FD's.
 3. Include telecommunications in that training.
5. Accountability
 1. Implement and follow written procedures for accountability.
 1. Excuses for why we don't implement can no longer be accepted.
6. Command Checklist must be used on every call.
 1. At least one person has to NOT look at the fire but rather look at the checklist/command board and work off of it.
 1. Insure that all critical steps are evaluated and considered.
 2. Training on use of checklist.
7. Train and certify officers to Incident Safety Officer level.
 1. Require certification for future promotions
8. Training for all members on new/modern strategy and tactics.
9. Training for all members on basic structural fire suppression tactical application.
 1. Advance hose line up and down stairways.
 2. Ceiling pull.
 3. Hidden fire tactical application.
 4. Truck company operation without a "truck company." Institutionalize 5114 Mesker Park Drive / - every current and future member must be made aware of this close call.
 5. Near-miss due to multiple tactical decisions.

County Fire Recommended Actions

1. Train together

1. Quarterly combined training.
 1. Operational based
 2. Organizational based
2. We respond together we should be training together.
 1. This builds trust and confidence in each others capabilities.

2. Review of policies and procedures

1. What are the command procedures used by each department?
 1. What can be standardized?
 2. What can be improved?
2. What policies and procedures can be implemented as Suburban Fire policies and procedures?
 1. Conduct training on standardized policy and procedures.

3. Command Support Staff

1. Especially during daytime/weekday hours 2 additional command qualified staff need to be dispatched to the scene.
 1. Do not wait for a working fire to be declared.
 2. Tactical support for the Incident Commander is critical in the first 15 minutes.
 1. Later tactical support is important but not as critical as the first 15 minutes.

4. Safety Officer Response

1. Especially during daytime/weekday hours a designated/qualified safety officer should be dispatched to the scene.
2. Do not wait for a working fire to be declared.

5. Structure Fire during daytime hours - multiple departments.

1. Because of the distance between stations - multiple departments should be dispatched on the initial response.
2. This will reduce mutual aid response by 6 minutes or more.

6. Areas that touch the City of Evansville - consider EFD stations dispatched to the scene.

1. EFD are not for move ups





Previous Incidents demonstrate close calls/near miss happen in German Township.

1. Institutionalize the AAA Auto Parts fire - exploding compressed air tanks.
 1. Commercial building with used auto parts and multiple hazardous materials involved along with compressed flammable gas tanks that exploded and rocketed through the air endangering the public, other structures and firefighters.
2. Institutionalize the Laurel Avenue residential structure fire / our current and future members need to know the near misses we have had.
 1. 3 firefighters entered a residential structure. This was the first time GTFD had deployed a TIC on the initial attack line. Interior crew told command to close the front door when they went inside in order to control the flow path. When the door was closed the TIC operator noticed a white spot on the TIC and told the crew to stop. He then crawled forward and found a hole in the floor.
3. Institutionalize the Silver Bell Tavern fire / our current and future members need to know it HAS HAPPENED in German Township.
 1. 9 firefighters were injured when the roof collapsed. The tavern was closed for the day. There was no one in the structure. The insurance company rebuilt the structure. Silver Bell Tavern remains in business today. The cause of the fire was electrical short in light above the pool table.
4. Institutionalize the memory of Matt Kirkman - our current and future members need to know it HAPPENED to GTFD.
 1. Matt died in a MVA, off duty. The driver of the pickup truck was convicted of driving a motor vehicle under the influence of alcohol.
5. Institutionalize the memory of Division Chief Don Neel - our current and future members need to know how a dedicated member made a difference in the lives he touched.
 1. Chief Neel died of a aneurism. His son-in-law Mike Plumlee was the first to arrive and initiated CPR.
 1. Mike Plumlee was married to Beth (Neel) Plumlee, Chief Neel's daughter and came with Mike to the house.
6. Institutionalize the memory of Jeremy Tighe - our current and future members need to know it HAPPENED to McCutchanville.
 1. Jeremy died in a fire apparatus crash. He was in the Captain seat when the Engine ran off the road and hit a telephone pole.
 2. GTFD members were the first on the scene of this fire apparatus accident that took the life of Firefighter Tighe.