

**LINE OF DUTY
DEATH REPORT
REPORT SLIDES**



F2022-10

Two Volunteer Firefighters Die
while Conducting Fire Attack at a
Single-Family Residence –
Pennsylvania

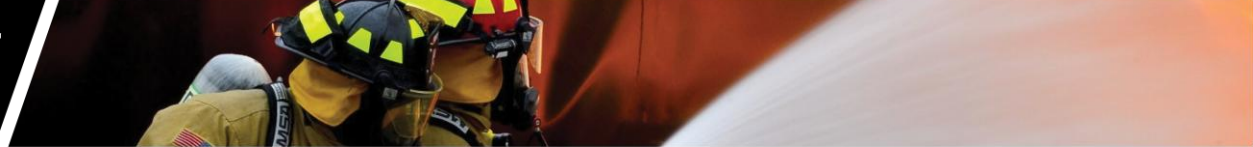


Summary

- On December 7, 2022, two volunteer firefighters died after being exposed to a hostile fire event, losing their primary egress, and running out of air at a single-family residential structure fire.
- At 15:44 hours, the 911 public safety answering point (PSAP), referred to as County Radio, received a call reporting a fire in a residential structure with occupants still inside.



A view of the structure and conditions at the approximate time of the Mayday operation.
(Courtesy of the fire department)



Summary

- The caller, an occupant of the residence, advised that there was a fire involving oil or kerosene, the house was rapidly filling with smoke, and he was unable to locate another family member.
- At 15:45 hours, five volunteer fire departments were dispatched to a reported structure fire with entrapment.
- A police officer and chief fire officer arrived on-scene at 15:49.
- They reported heavy smoke coming from the house and advised that one occupant was missing.
- At approximately 15:51 hours, the initial arriving fire units began primary searches in the structure for the missing occupant.



Summary

- They initially encountered moderate to heavy smoke conditions, but no fire conditions on the first and second floors.
- At 15:58 hours, interior crews reported to Command that the primary search did not result in the occupant being found.
- Secondary searches were initiated.
- The crews also reported that they had not located any fire on the first or second floor, but that smoke conditions were increasing.
- They requested the deployment of hoselines into the house for protection.



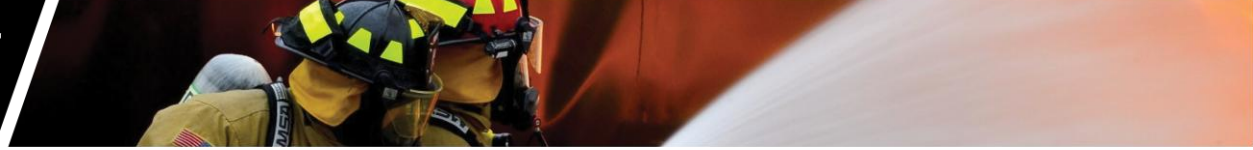
Summary

- Exterior crews identified the main body of fire in the cellar from an exterior entrance on Side Charlie.
- A crew then initiated a fire attack into the rear cellar from the exterior.
- At 16:05 hours, exterior teams attempted to extinguish the cellar fire with water but were unsuccessful due to the involvement of a combustible liquid (fuel oil).
- Firefighters recognized the odor of a combustible liquid, combined with the inability to extinguish the fire with water, and a call was made to switch to foam for the cellar fire.
- A hoseline was deployed through the front door to the second floor for fire attack.



Summary

- Fire was located on the second floor towards Side Charlie.
- At approximately 16:11 hours, interior crews reported fire in multiple locations on the second floor and requested additional hoselines.
- Two companies from fire department 17 (engine and tanker) arrived on-scene and reported to the command post for an assignment.
- The crew of Engine 1712 was directed to enter and assist crews on the second floor with search and fire attack.
- At 16:17 hours, an interior crew on the second-floor reported fire conditions were deteriorating in multiple locations and they were leaving their position.



Side Charlie. The exterior door to the rear cellar is visible. The fire extension pathway from the cellar to the top half story is clearly visible. *(Courtesy of NIOSH)*



Summary

- Interior crews reported that the secondary searches were completed at 16:19 hours.
- Between 16:20 and 16:30 hours, multiple crews were operating on the second floor with two hoselines, one hoseline deployed through the front door up the stairs and one hoseline deployed via a ground ladder on Side Bravo.
- Crews on the exterior Side Charlie were also utilizing a hoseline to flow foam to fight the cellar fire and the fire that had extended up the Side Charlie wall.
- The fire had extended upward from the cellar through voids and the interior to the first floor, second floor, and top half story of the structure.
- At 16:31 hours, the incident commander (IC), Chief 37, advised County Radio that Chief 32 was Safety, Chief 55 was Water Supply, and Chief 3701 was Operations.



Summary

- Based on multiple reports of deteriorating conditions, Operations Chief 3701 called for all units to evacuate the structure and requested that County Radio activate the evacuation tones at 16:32 hours.
- Chief 3701 then called for a personal accountability report (PAR).
- At 16:33 hours, Deputy Chief 17 advised Operations Chief 3701 that two fire department 17 firefighters were trapped on the second floor.
- Deputy Chief 17 was communicating with the two firefighters on the fire department 17 radio frequency, which was different than the fireground radio frequency.
- Chief 3701 called for a hoseline to the front door and advised everyone that he had firefighters trapped on the second floor.



Summary

- Multiple crews, acting as two rapid intervention teams (RIT), started an effort to reach the second floor.
- One crew accessed the porch roof on Side Alpha via ground ladders to initiate Vent Enter Search (VES) while one crew entered the front door and attempted to use the front stairs to reach the second floor.
- At 16:34 hours, a Mayday call was made by a firefighter operating on the porch roof on Side Alpha.
- The call was acknowledged by Command. The Mayday caller advised that he had a downed firefighter inside of a window.
- At 16:36 hours, Command requested clarification on the Mayday status and accountability responded that they had two fire department 17 firefighters missing.



Summary

- Deputy Chief 17 confirmed that there were still two fire department 17 firefighters trapped on the second floor at 16:40.
- Due to rapidly developing fire conditions on both the first and second floor, the RIT was forced back out of the building.
- Between 16:40 and 16:52 hours, multiple crews worked from the front porch roof to access firefighter 17-1 who was found in the Alpha/Bravo corner bedroom.
- He was found unconscious and out of air.
- Additional crews entered the second floor from the front porch roof via the window on Side Alpha where firefighter 17-1 was being removed.

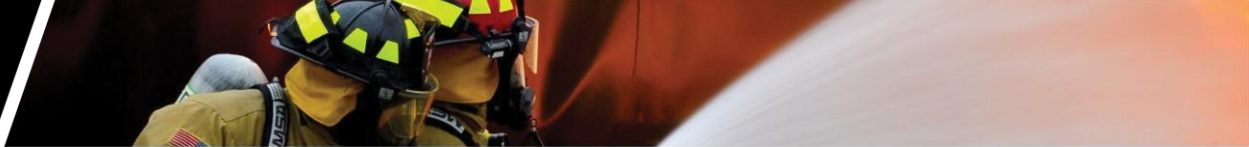


Summary

- They searched the rest of the front half of the second floor and worked towards the Alpha/Delta corner.
- Conditions on the second floor at this time were rapidly deteriorating with a flow path moving from the rear stairs through the center hallway and out the front window at the end of the hallway on Side Alpha.
- Between 16:52 and 17:02 hours, firefighter 17-1 was moved onto the front porch roof.
- He was then moved to the ground via ladders and transferred to the care of emergency medical services (EMS) in the front yard.



Sides Alpha and Delta.
(Courtesy of NIOSH)



Summary

- Firefighter 17-2 was found by RIT in the Alpha/Delta bedroom.
- Firefighter 17-2 was out of air and unconscious.
- Firefighter 17-2 was extricated onto the front porch roof via the window and moved to the ground via ladders and transferred to the care of EMS.
- Both firefighters were transported to a local hospital in separate ambulances and pronounced deceased at the hospital.



Sides Alpha and Bravo. The Bilco door to the front cellar (circled in red on the photo) was visible on Side Bravo.
(Courtesy of NIOSH)



Contributing Factors

- Arson fire with an ignitable liquid
- Building construction and void spaces in combination with a previous fire
- Strategy & tactics specific to hoseline deployments during fire attack
- Incident management specific to incident assignment tracking and benchmarking
- Ongoing risk vs. benefit analysis
- Situational awareness during rapidly deteriorating conditions
- Mayday operations and management



Recommendations

Fire departments should:

- Provide training on fire behavior involving Class B ignitable liquid fires that includes the appropriate fire attack strategies.
- Recognize and react to the impacts of building construction on fire behavior.
- Conduct fire suppression operations in accordance with NFPA 1700.
- Utilize communications and tracking of operations at the tactical and strategic levels.
- Execute risk management principles at the tactical and strategic levels.
- Maintain situational awareness at the task, tactical, and strategic levels.
- Ensure that all firefighters and fire officers are trained in fireground survival procedures and Mayday operations.

Contact Us

Fire Fighter Fatality Investigation and Prevention Program
Surveillance and Field Investigations Branch

Division of Safety Research

NIOSH 1000 Frederick Lane, MS 1808

Morgantown, West Virginia 26505-2888

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