

**LINE OF DUTY
DEATH REPORT
REPORT SLIDES**



F2018-16 PA

Career Lieutenant Suffers a Sudden Cardiac Event During Fireground Survival Training and Dies 2 days Later- Pennsylvania



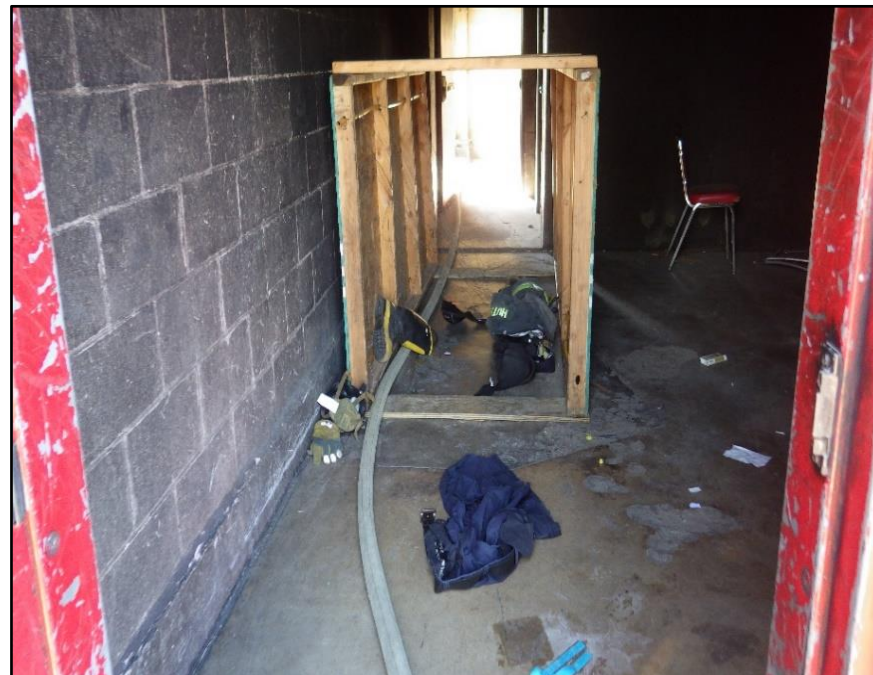
Summary

- On June 25, 2018, a 62-year-old career Fire Lieutenant (LT) suffered a sudden cardiac event during a training evolution at the fire training center and died 2 days later at the local hospital.
- The LT was participating in a 3-day International Association of Fire Fighters (IAFF) Fireground Survival Program.
- He collapsed on the third and final day of training while maneuvering through the entanglement prop of the self-contained-breathing-apparatus (SCBA) maze course.
- He was wearing full personal protective equipment (PPE) consisting of turnout gear and SCBA.
- He had exhausted his SCBA's compressed air and was "filter breathing."
- Filter breathing is a term some firefighters use when they disconnect their mask mounted regulator (MMR) and cover the opening with the lower portion of their PPE hood.



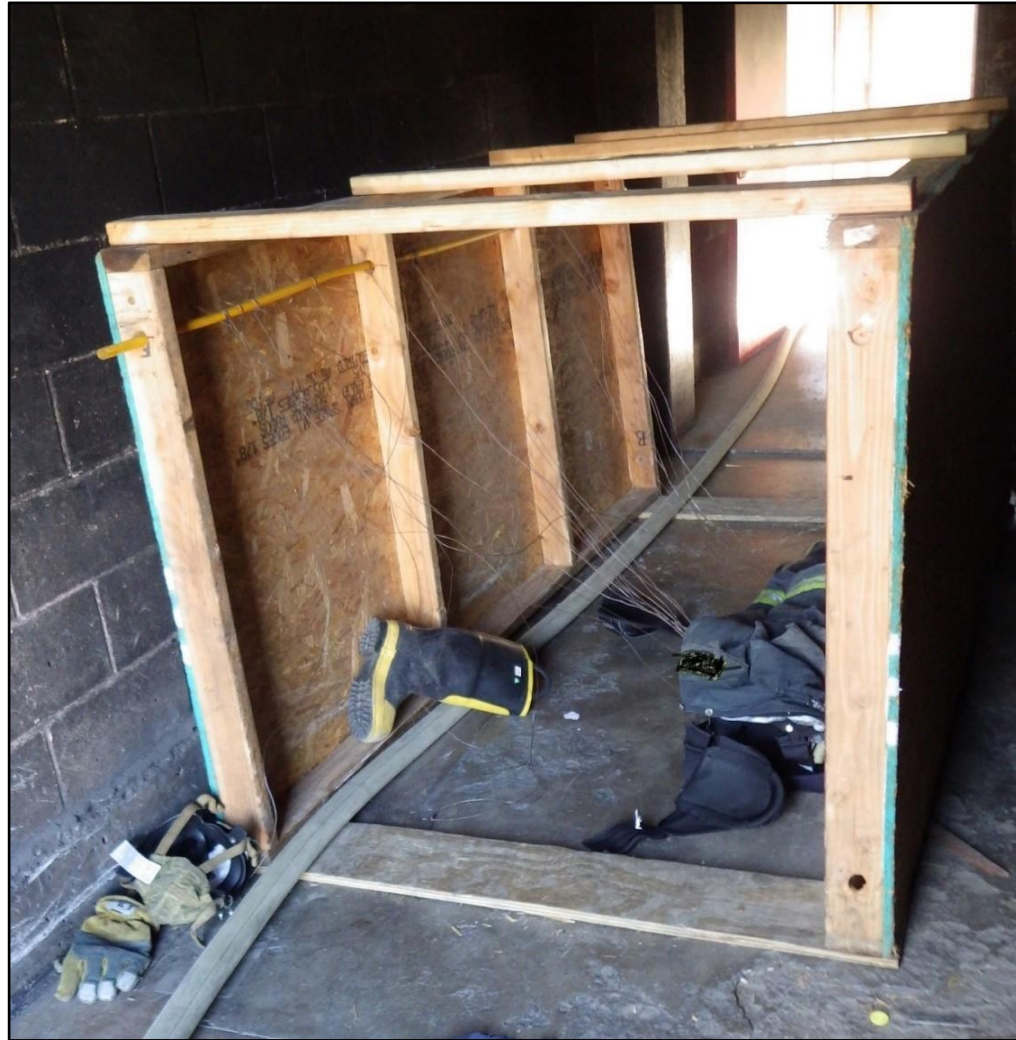
Summary

- The instructor observing the LT from outside of the entanglement box (see photo) noted he had stopped moving and was not responding to commands.
- The instructor opened the entanglement prop and removed the LT to the drill room floor for assessment. The LT was unresponsive, and CPR (cardiopulmonary resuscitation) was begun by fire instructors.
- On-scene fire department paramedics responded with advanced life support and transported the LT to the local hospital's emergency department.



The Lieutenant became unresponsive during the final SCBA entanglement prop on the 3-day survival class and died 2 days later at the hospital.
(Photo Courtesy Fire Department.)

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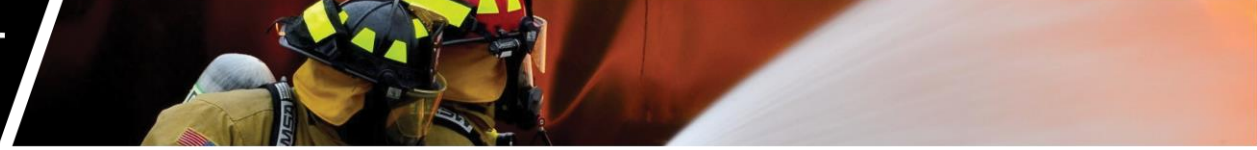


Close up photo of the disentanglement prop.
(Photo Courtesy of the Fire Department.)



Summary

- In the emergency department, advanced life support measures continued and, although the LT never regained consciousness, his cardiac status improved.
- He was admitted to the hospital's intensive care unit where subsequent testing revealed anoxic (without oxygen) brain damage.
- He was removed from life support and pronounced deceased on June 27, 2018.
- NIOSH investigators concluded that the exertion associated with the training activity triggered a sudden cardiac event in an individual with underlying cardiovascular disease (CVD).
- The autopsy report listed the cause of death as “hypertensive cardiovascular disease.”



Contributing Factors

- Undiagnosed hypertensive CVD
- Infrequent exercise stress tests (ESTs) for firefighters at risk for CVD
- Lack of annual medical clearance for unrestricted firefighting duties which includes training involving heavy physical exertion
- Physically strenuous training



Recommendations

- Fire departments should provide and require annual medical evaluations to all firefighters.
- Fire department physicians should ensure symptom-limiting exercise stress tests (ESTs) are provided to firefighters at increased risk of CVD.
- Fire departments physicians should use the information from the annual medical evaluation to make final medical recommendations regarding medical clearance for unrestricted firefighting duties and participation in physically strenuous training exercises.
- Fire departments should perform annual physical performance evaluations.
- Fire departments should consider phasing in a mandatory comprehensive wellness-fitness program for all firefighters to reduce CVD risk factors and improve cardiovascular capacity.



Recommendations

- Fire Departments and Authorities Having Jurisdiction (AHJs) should ensure training maze props and/or trailers used in advanced SCBA confidence training have adequate safety features such as emergency egress panels, emergency lighting, ventilation and temperature monitoring to measure the ambient temperature inside the maze or prop.
- As a part of a respiratory protection program, FDs and AHJs should consider which levels of SCBA skills training are essential (awareness level) and which levels are advanced (operations level) and may be optional for members.
- Fire departments and training organizations should ensure that established SCBA training protocols are followed for each level of SCBA skills taught, and that students are physically capable and medically cleared to participate.
- Fire departments should ensure a comprehensive rehabilitation program and process is in place during training exercises that pose a potential safety and health risk to firefighters.
- During advanced SCBA skills and confidence building training programs, students should be cautioned against “filter breathing.”

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