



In-Station Training

TM 25-28a Vehicle Fire



Author

Chief Ed Hartin

Purpose

What comes to mind when you are dispatched to a state highway for a vehicle fire? Vehicle types and the challenges they present vary widely. This 10-Minute Training provides an opportunity to exercise your skills as a command officer arriving at a vehicle fire just ahead of the first arriving engine.

Learning Outcomes

Command officers perform effective ongoing size-up; select an appropriate strategy, and implement tactics based on the strategic decision-making model.

Conducting the Drill

This incident involved a commercial vehicle fire on Georgia Route 15 (Athens Highway) just south of Lick Skillet Road in Greene County, Georgia on Wednesday, September 4, 2024, at 09:21 (Hayet, 2024, Union-Reporter, 2024; Mathews, 2024; & NIOSH, 2025). Review the map and photos (Figures 1-4) to gain an understanding of the incident area.

Figure 1. Map of the Incident Area

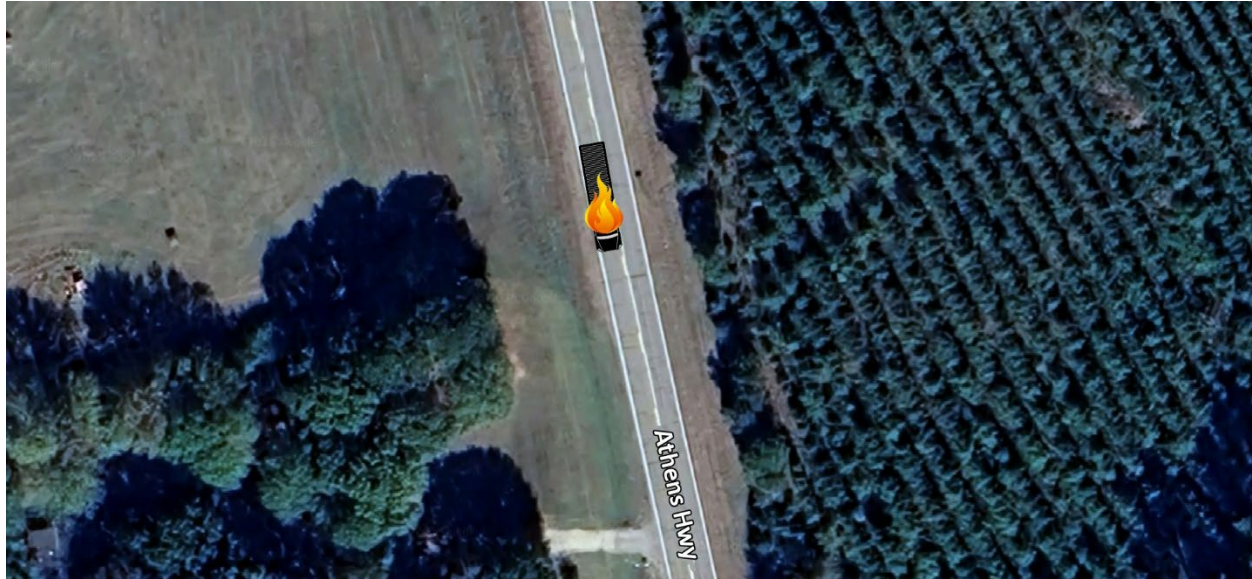


Note: Adapted from Google. (2025a). [Map, 2060 Athens Highway, Greensboro, GA].

<https://bit.ly/4nvZuZo>.

The closest water tender fill point is located 1.5 miles to the south at the intersection of North Laurel Street (Route 15) and Mize Court as illustrated in Figure 1.

Figure 2. Aerial View



Note: Adapted from Google. (2025b). [Aerial view 2060 Athens Highway, Greensboro, GA].
<https://bit.ly/44tsXe6>.

Figure 3. View from the South (Direction of Travel)



Note: Adapted from Google. (2023a). [Street view 2060 Athens Highway, Greensboro, GA].
<https://bit.ly/44lvEcR>.

Figure 4. View from the North



Note: Adapted from Google. (2023b). [Street view 2060 Athens Highway, Greensboro, GA]. <https://bit.ly/4nJvPwe>.

You have been dispatched along with an engine company to Athens Highway, just south of Lick Skillet Road for a vehicle fire at 09:21. **You are responding to this incident as the first arriving command officer.** Temperature is 72° F with wind from the east northeast at 13 mph with gusts to 15 mph. Gusty winds are expected to increase over the next several hours (Weather Underground, 2024). You are responding from quarters along with the engine and you hear them go enroute shortly after you. The engine has four-person staffing¹. If needed, reference materials include the [Emergency Response Guidebook](#) (US DOT, 2024) and [Pocket Guide to Hazardous Chemical Hazards](#) (NIOSH, 2020).



Time starts now! Answer the first eight questions within the next 10 minutes. After answering the first question, decide and put your answers in the form of communication you would have with the responding companies. Save discussion for after answering the first eight questions.

1. What critical factors would you consider when dispatched and during response?

¹ If your first alarm deployment for a vehicle fire is different, use your own resource assignment and staffing.

While enroute, dispatch provides an update that the fire involves a tractor trailer, and multiple callers reporting black smoke from the vehicle and upgrades the assignment, adding an additional engine and water tender². You will arrive from the south shortly before the first engine. The additional engine and water tender will arrive approximately 16 minutes after the first engine.

2. Given this additional information, what critical factors would you consider during response?

Chief 2 advises that he is in the area and adds himself to the incident shortly before you arrive. Examine Figure 5 illustrating conditions on arrival (incident video begins later in the incident).

Figure 5. Conditions on Arrival from the South



Note: National Institute for Occupational Safety and Health. (NIOSH). (2025). *Death in the line of duty report F2024-05*. <https://bit.ly/44sJZbZ>

² The second engine and water tender are cross staffed with three personnel on the engine and one on the water tender.

3. State your initial radio report (IRR) exactly as you would transmit it to dispatch.
4. Where would you position your command vehicle and what specific actions would you take (as the first arriving command officer) immediately upon arrival?

Watch the [incident video](#) (Hayet, 2024) from 01:05 to 01:35 and examine Figure 6 illustrating conditions as viewed from the north, shortly after your arrival. You do not observe the driver inside the cab or on the roadway outside the truck.

Figure 6. Conditions Viewed from the North Shortly After Arrival



Note: National Institute for Occupational Safety and Health. (NIOSH). (2025). *Death in the line of duty report F2024-05*. <https://bit.ly/44sjZbZ>.

5. State your follow up report exactly as you would transmit it.
6. Engine 1 arrives from the south and blocks both lanes of the highway, State the tactical order you would give Engine 1 exactly as you would transmit it.

Chief 2 arrives and reports that he is staged to the south on Athens Highway.

7. State the tactical assignment you will give Chief 2 exactly as you would transmit it.
8. What tactical assignments would you anticipate giving Engine 2 and Water Tender 2 (actual assignments would likely be influenced by conditions, actions, and needs reports from Engine 1)



Reflect on your strategic decision-making and responses to questions one through eight before answering the next six questions. Give some thought to what cues, patterns, or anomalies (differences from conditions that you would anticipate) inform your answers.

9. What was the problem?
10. What was getting in the way of achieving your tactical priorities?
11. Was there anything in this incident that could have hurt or killed you (right now)?
12. Was it reasonable to believe that the truck was occupied?
13. Was there searchable space?
14. If you believed it was reasonable that the truck was occupied and there was searchable space, what could you do about it?

The remainder of the questions in this 10-Minute Training are based on operations at the actual incident. Differing from this 10-Minute Training, Engine 11 and Engine 13 had a staffing level of two personnel and three chief officers (Battalion 1, Chief 1101, and Chief 8) were on scene. A water tender had been dispatched but was not yet enroute. Watch the [incident video](#) (Hayet, 2024) from 03:55 to 05:10. Summarizing action taken to this point, Battalion 1 is positioned to the north of the incident and Engine 11 is positioned to the south. Engine 11 has stretched a 1 ¾" attack line for fire control. During reconnaissance Battalion 1 determined that the container was refrigerated and had no placards or other indication of the presence of hazardous materials (other than the vehicle's diesel fuel) and that the whereabouts of the driver are still unknown.

15. Was the initial application of water by Engine 11 effective? What indicators lead you to this conclusion?

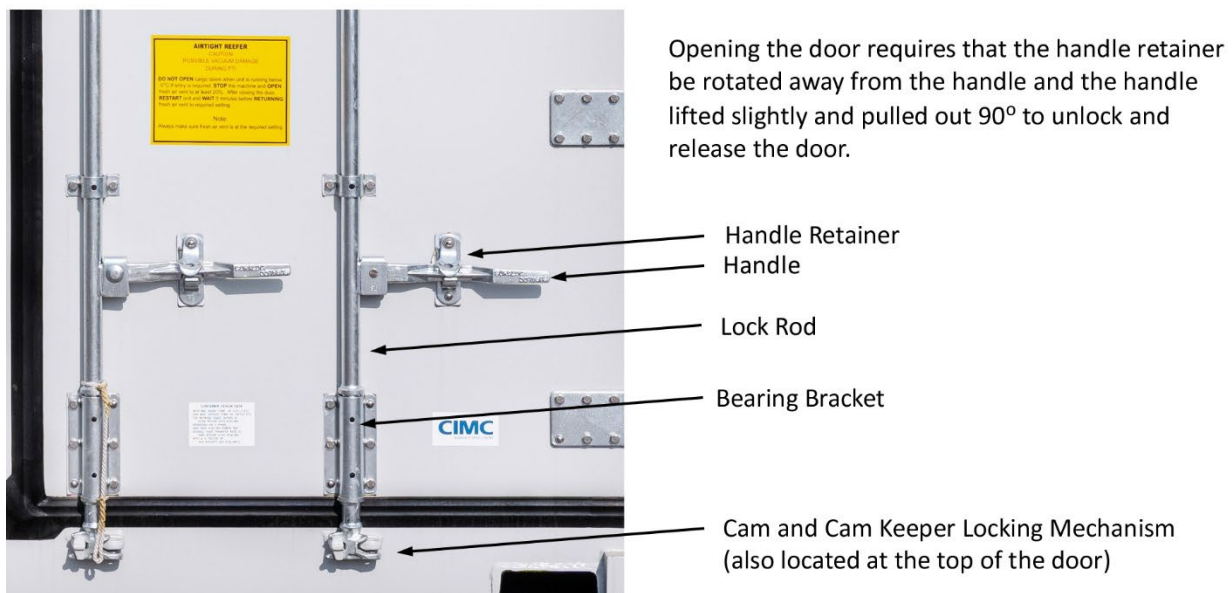
16. What concerns would you have at this point in the incident and what actions would you take to resolve them?

17. If the cab was able to be searched (finding no occupants) or the driver was located and indicated that he was the only occupant, would remaining in the offensive strategy continue to be a reasonable course of action? Why or why not?

Watch the [incident video](#) (Hayet, 2024) from 05:10 to 06:00 and examine Figure 7. Battalion 1 approached the rear of the container with the intention of opening it to identify the contents. It is likely that Battalion 1 unlatched the handle retainer was unlikely to have had time³ to sufficiently open the container, prior to the explosion.

³ YouTube videos have frame rates between 24 and 60 frames per second. The screen shots in Figure 7 are adjacent frames, the time difference is between 1/24th of a second and 1/60th of a second.

Figure 7. Rear of the Container as the Explosion Occurred



Note: Adapted from Video provided to NIOSH and Underwriters Laboratories Fire Safety Research Institute (Hayet, 2024) and SeaCube. (2025) 20 Foot Reefer. <https://bit.ly/4eyL6LZ>.

- The refrigerated container contained a load of frozen chicken. Based on observed conditions in the incident video, were there any indicators of potential for an explosion? If so, what cues were of concern? What type of event do you think may have occurred in this incident? Why?

Additional Learning: The additional learning accompanying this 10-Minute Training includes reading *National Institute for Occupational Safety and Health (NIOSH) Report F2024-05 (2025)* examining the death of Greene County Fire Rescue Battalion Chief Chris Eddy. While this report contains valuable information and can be a useful source for lessons learned, there are some significant errors and omissions. Review the following critique of this report prior to reading NIOSH Report F2024-05 (2025).

Department of Transportation Emergency Response Guidebook (2024) Page 111 is misrepresented as an "intermodal container type". Guide Page 111 applies to "Mixed Load/Unidentified Cargo" (DOT, 2024, p. 152-153). This guide page applies regardless of whether container type or mode of transport.

There is considerable discussion regarding pressure vessels and maximum allowable working pressure (MWAP) as well as pointing out the potential for elevated pressure within intermodal freight containers. While an intermodal container may contain pressure vessels, refrigeration systems have pressurized components, and elements of container framing may be closed containers; intermodal freight containers are not "pressure vessels".

The NIOSH (2025) report stated that the vehicle was not placarded (which makes sense, since frozen chicken is not a hazardous material). However, it is important to note for highway or rail transport within the United States, hazardous materials in 49 Code of Federal Regulations (CFR) Section 172.504 Table 2, only require placarding when the aggregate gross weight of those materials in non-bulk packages reaches or exceeds 1,001 pounds (454 kg). However, materials in 49 CFR Section 172.504 Table 1 must always be placarded regardless of quantity. Table 1 hazardous materials are:

- Explosives (Division 1.1, 1.2, 1.3)
- Poison Gas (Division 2.3)
- Dangerous When Wet (Division 4.3)
- Organic Peroxide Type B, Liquid or Solid, Temperature Controlled
- Poisons-Inhalation Hazard (Division 6.1)
- Radioactive III (Hazard Class 7)

While This NIOSH report somewhat confuses the rapid fire progression phenomena of smoke explosion and backdraft. The report states:

A smoke explosion, like this case, can happen in any fire in a compartment. This could be a structure fire, or something different such as the trailer in this instance. The key indicators are the compartment is filled with products of combustion and oxygen is consumed or limited all it takes is the introduction of oxygen to the mixture to support a violent reaction.

While this is sort of correct, it neglects to speak to the fact that a smoke explosion involves pre-mixed smoke (fuel) and air that is within its flammable range that encounters a source of ignition. No change in ventilation is necessary for a smoke explosion to occur. In a smoke explosion, existing ventilation often

results in intake of atmospheric oxygen resulting in a flammable mixture, but **no change in ventilation is required**. This key point is missing in the report.

The NIOSH investigators did not make any recommendations regarding firefighters being trained in fire dynamics and understanding the hazards presented by fires in enclosures (including vehicles).

There were recommendations by reviewers of the draft report that were not incorporated in the final document prior to release. This is unfortunate as this tragic incident can provide important lessons related to fire dynamics and the design, construction, and characteristics of refrigerated intermodal containers.

Read [*Death in the line of duty report F2024-05*](#) (NIOSH, 2025) and discuss this report with the companies you supervise. What lessons can you draw from this incident, the NIOSH investigation, and in particular, the analysis provided by the Underwriters Laboratories Fire Safety Research Institute in Appendix One and Two of the NIOSH (2025) report.

Revisit [*10-Minute Training 25-17 Residential Fire Mayday*](#) (Hartin, 2025a) and read the series of Command Competence blog posts on backdraft and smoke explosion, starting with [*Backdraft and Smoke Explosions Part 1-What's the Difference?*](#) (Hartin, 2025b).

References

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