



In-Station Training

TM 23-50 Electrical Problem



Author

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Purpose

Fires involving underground electrical utilities present a range of hazards. These types of incidents may be dispatched as an electrical problem, utility access hole¹ fire, or report of odor or smoke in a building.

Learning Outcomes

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

Conducting the Drill

This incident involved an underground electrical fire at 3819 South George Mason Drive, Falls Church, Virginia on November 7, 2023, at 16:30 (FirefighterNation, 2023, Statter, 2023, & Fairfax County Fire/Rescue, 2023). Review the map and photos (Figures 1-7).

Figure 1. Map of the Incident Area



Note: Adapted from Google. (2023a). [Map, 3819 South George Mason Drive, Falls Church, VA].

<https://bit.ly/464uoy9>.

¹ Utility access hole or maintenance hole is the gender-neutral term for what has historically been referred to as a “manhole”. It is outside the scope of this 10-Minute Training to address the concept of gender-neutral language, but have a look at [Does the use of gender-neutral words help promote gender equality?](#) (Staples, 2019).

Figure 2. Aerial View



Note: Adapted from Google. (2023b). [Aerial view, 3819 South George Mason Drive, Falls Church, VA]. <https://bit.ly/3FTSVvi>.

Hydrants are located on South George Mason Drive and Seminary Road as illustrated in Figures 1 and 2.

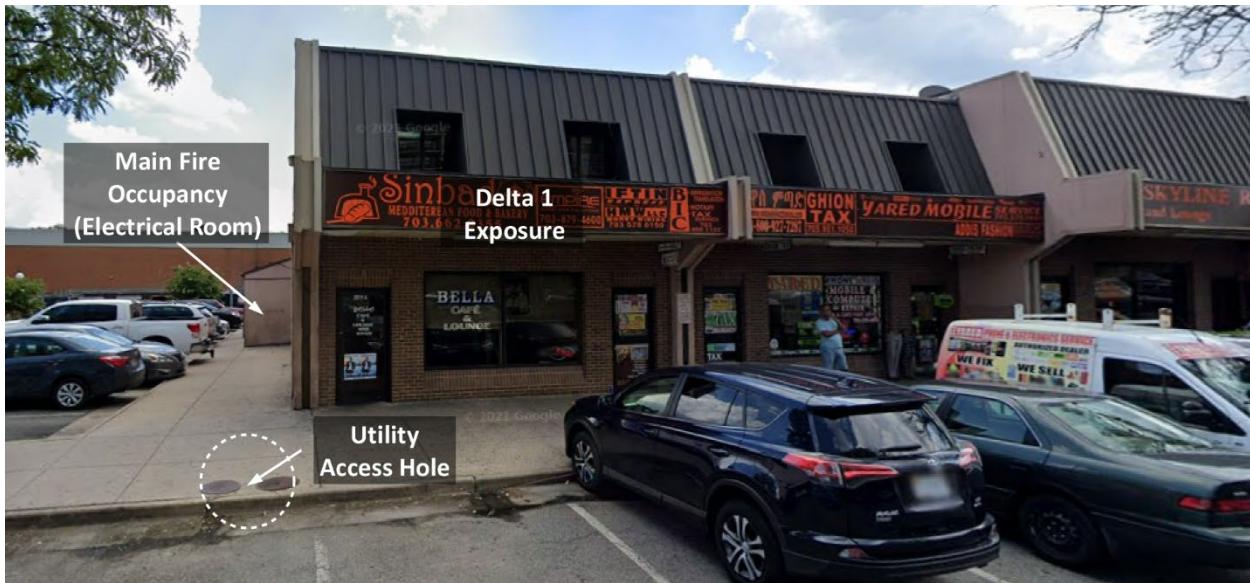
Designation of the sides of the building are based on the standard convention of specifying the primary operating position or point of access as Side Alpha.

Figure 3. Alpha/Delta Corner



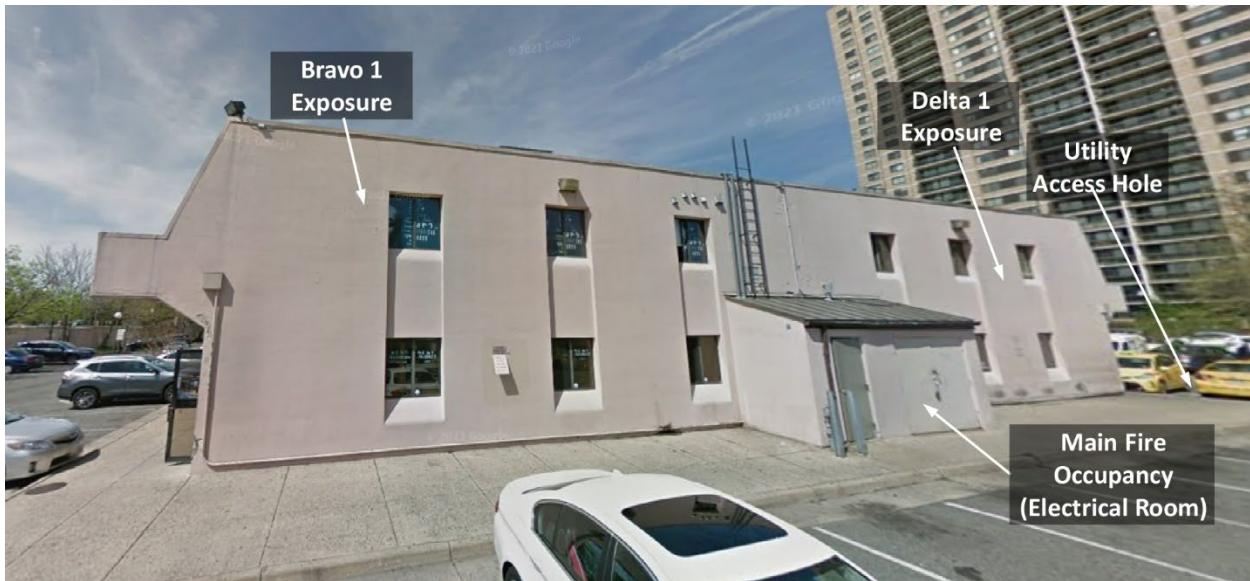
Note: Adapted from Google. (2018a). [Street view, 3819 South George Mason Drive, Falls Church, VA]. <https://bit.ly/3G0pasB>.

Figure 4. Side Delta



Note: Adapted from Google. (2018b). [Street view, 3819 South George Mason Drive, Falls Church, VA]. <https://bit.ly/3szl0Un>.

Figure 5. Side Alpha



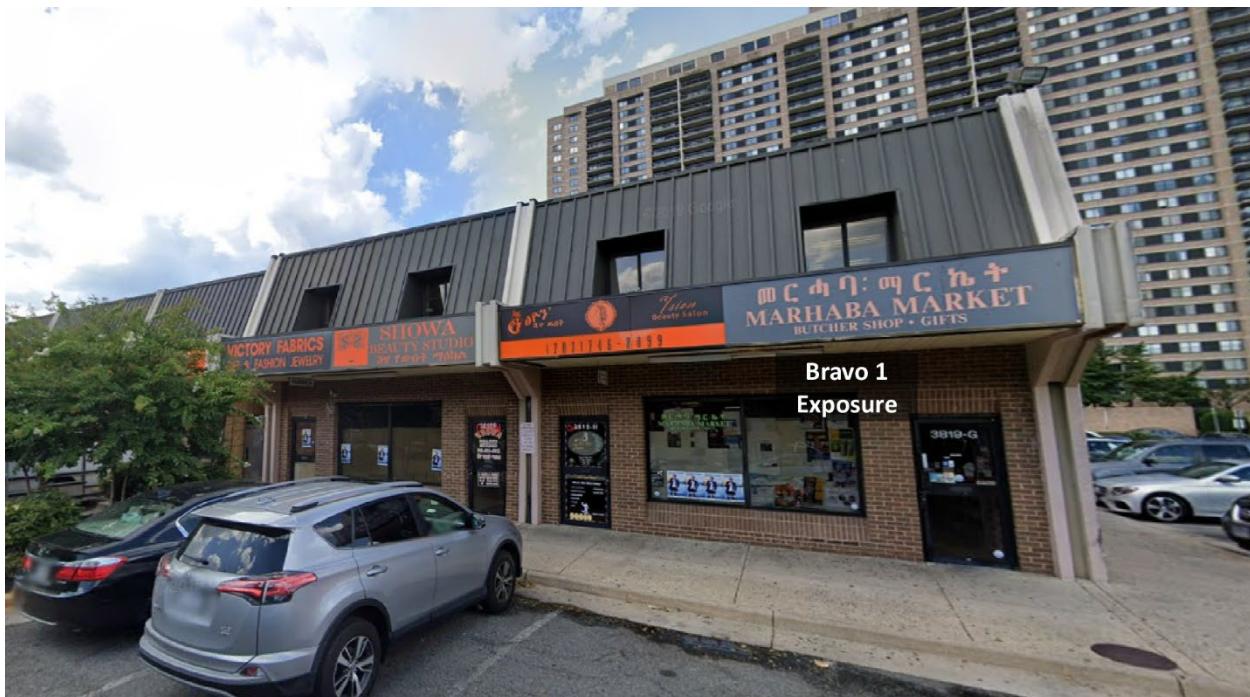
Note: Adapted from Google. (2018c). [Street view, 3819 South George Mason Drive, Falls Church, VA]. <https://bit.ly/475Wfzz>.

Figure 6. Electrical Room Access



Note: Adapted from Google. (2018d). [Street view, 3819 South George Mason Drive, Falls Church, VA]. <https://bit.ly/49xLsiZ>.

Figure 7. Side Bravo



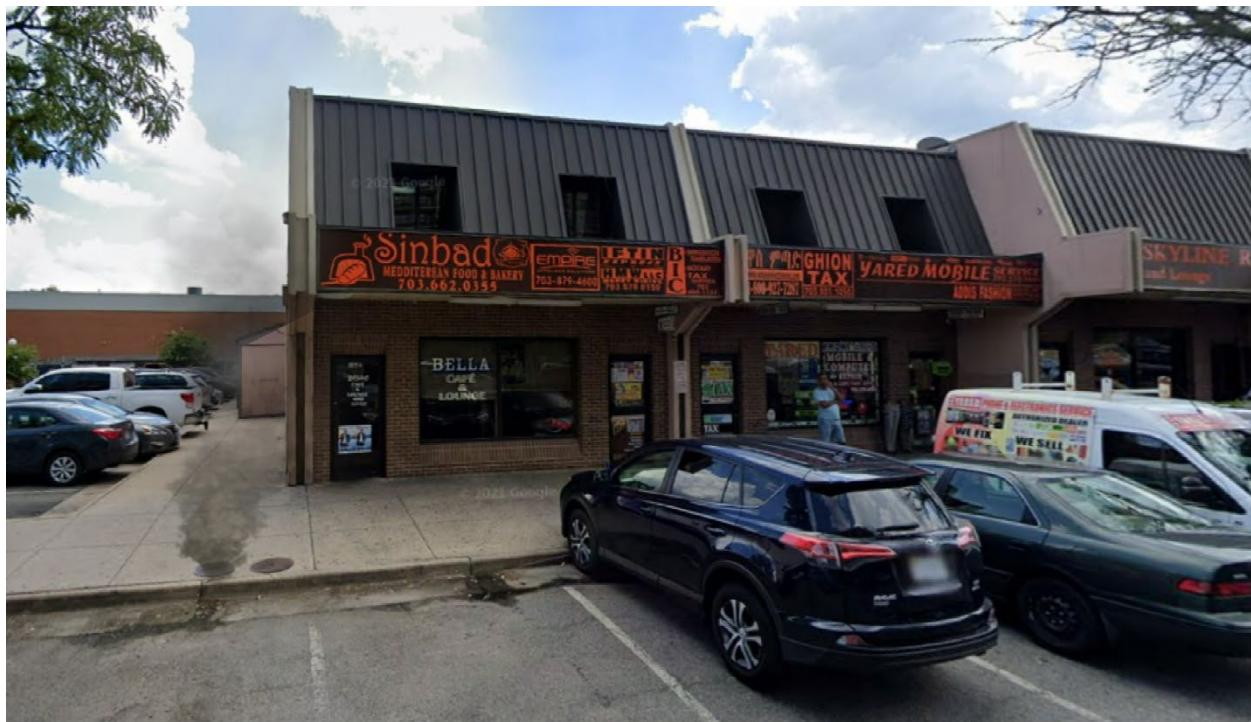
Note: Adapted from Google. (2018e). [Street view, 3819 South George Mason Drive, Falls Church, VA]. <https://bit.ly/3QqrxK4>.

The temperature is currently 72° F with wind from the south at 7 mph (Weather Underground, 2023). You have been dispatched on a single engine response to 3819 South George Mason Drive for a report of an electrical problem at 16:30. You are the company officer or AIC of the first arriving engine and have your company's typical staffing.

1. What critical factors would you consider when dispatched and during response and what conversations would you have with your crew while responding?

Examine Figures 8 and 9 and watch the first eight seconds [incident simulation video](#) (Hartin, 2023) illustrating conditions on arrival.

Figure 8. Conditions on Arrival-Side Delta



Note: Adapted from Hartin (2023a) 3819 South George Mason Drive Simulation [Fire Studio 7 digital simulation]. https://youtu.be/wJ9go5x_8IM.

Figure 9. Conditions on Arrival-Side Alpha



Note: Adapted from Hartin (2023a) 3819 South George Mason Drive Simulation [Fire Studio 7 digital simulation]. https://youtu.be/wJ9go5x_8IM.

2. State your initial radio report (IRR) exactly as you would transmit it to dispatch.

3. What specific actions would you take (as the company officer) immediately upon arrival and exiting the apparatus and what task orders you would give your crew?

Examine Figure 10 illustrating conditions on Side Alpha and watch the remainder of the [incident simulation video](#) (Hartin, 2023).

Figure 10. Conditions Outside the Electrical Room



Note: Adapted from Hartin (2023a) 3819 South George Mason Drive Simulation [Fire Studio 7 digital simulation]. https://youtu.be/wJ9go5x_8IM.

4. Would you change the action you are taking or modify the assignments given to your crew? If so, what task orders would you provide?

5. State your update report exactly as you would transmit it to dispatch.

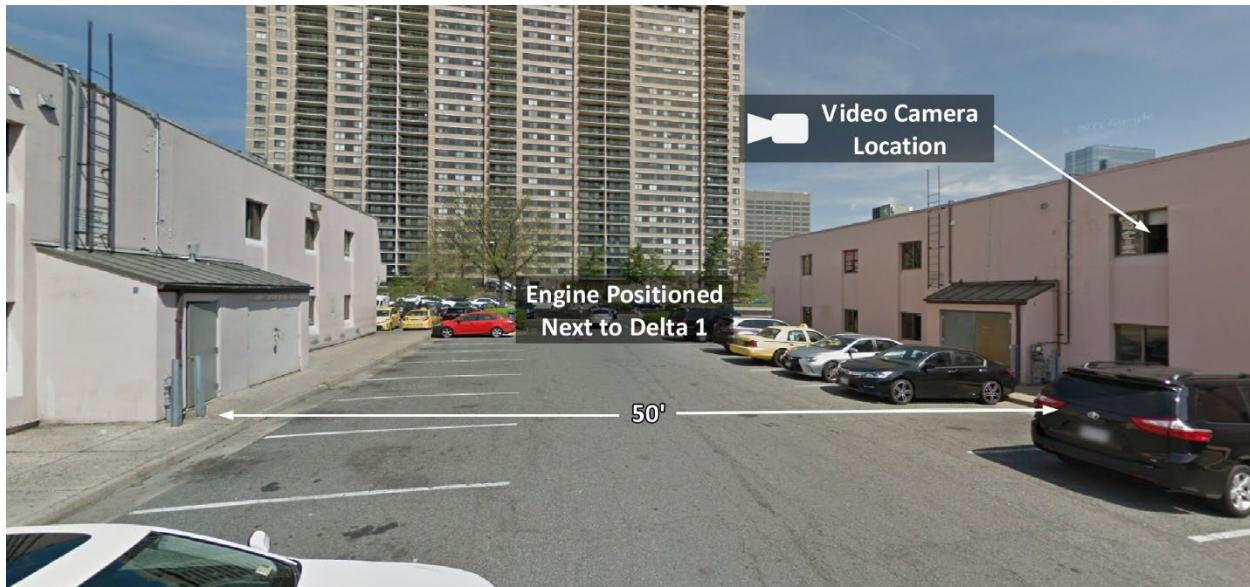
The next two questions assume that response was upgraded to a commercial fire. You hear additional companies and a command officer dispatched and go enroute.

6. Engine 2 arrives and reports that they are Level 1. State the tactical assignment you would give them exactly as you would transmit it.

7. Based on the anticipated effectiveness of your tactical operations, state your conditions, actions, and needs (CAN) report that you would provide to the first arriving command officer as part of command transfer to IC #2?

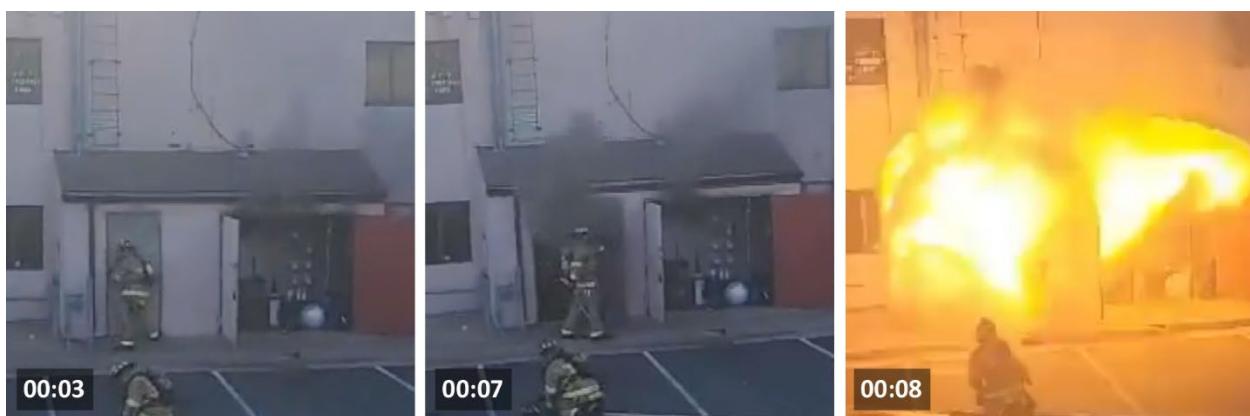
Watch the [incident video](#) (Fairfax County Fire/Rescue, 2023), examine Figure 11 illustrating apparatus and video camera locations, and Figure 12 sequenced screen captures from the incident video.

Figure 11. Apparatus and Video Camera Positioning



Note: Adapted from Google. (2018f). [Street view, 3819 South George Mason Drive, Falls Church, VA]. <https://bit.ly/464XYnr>.

Figure 12. Sequenced Video Capture.



Fairfax County Fire/Rescue (2023). Utility emergency in the 3800 blk of S George Mason Dr. Retrieved November 11, 2023, from <https://bit.ly/3u9COHr>.

8. Read [Extreme Fire Behavior-Understanding the Hazard](#) (Hartin, 2023b). What rapid (explosive) fire development phenomena was encountered in this incident? What leads you to this conclusion?

9. Rewatch the incident video several times and identify the building, smoke, air track, heat, and flame indicators that may have pointed to the potential for rapid (explosive) fire development.

10. With 20/20 hindsight how would you approach this incident? What changes would you make in your incident action plan?

Additional Learning: While this incident did not involve a utility access hole explosion, [Understanding and Mitigating Manhole Explosions](#) provides insight into below grade electrical fires and explosions.

An incident like the one examined in this 10-Minute Training occurred on March 26, 2008, at 8540 South Sepulveda Boulevard in Los Angeles, California. The incident in Los Angeles had tragic consequences, resulting in the line-of-duty death of Firefighter Brent A. Lovrien and serious injury to Engineer Anthony J. Guzman. Read [15th Anniversary of the Line-of-Duty Death of Brent A. Lovrien](#) (Prange, 2023) and [NIOSH Death in the Line of Duty 2008-11](#) (NIOSH, 2009).

Discuss the similarities and differences between the Falls Church and Los Angeles incidents with your crew. What lessons can you draw from these two incidents?

References

Fairfax County Fire/Rescue (2023). Utility emergency in the 3800 blk of S George Mason Dr. Retrieved November 11, 2023, from <https://bit.ly/3u9COHr>.

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Weather Underground (2023). *Arlington, VA weather history* [historical weather November 7, 2023]. Retrieved November 11, 2023, from <https://bit.ly/3QrYqpW>.