



In-Station Training

TM 24-36 Pallet Yard Fire



Author

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Purpose

Fires in outside storage areas can present unique challenges including limited access, substantial fire load, potential for rapid fire development, and extension to exposures.

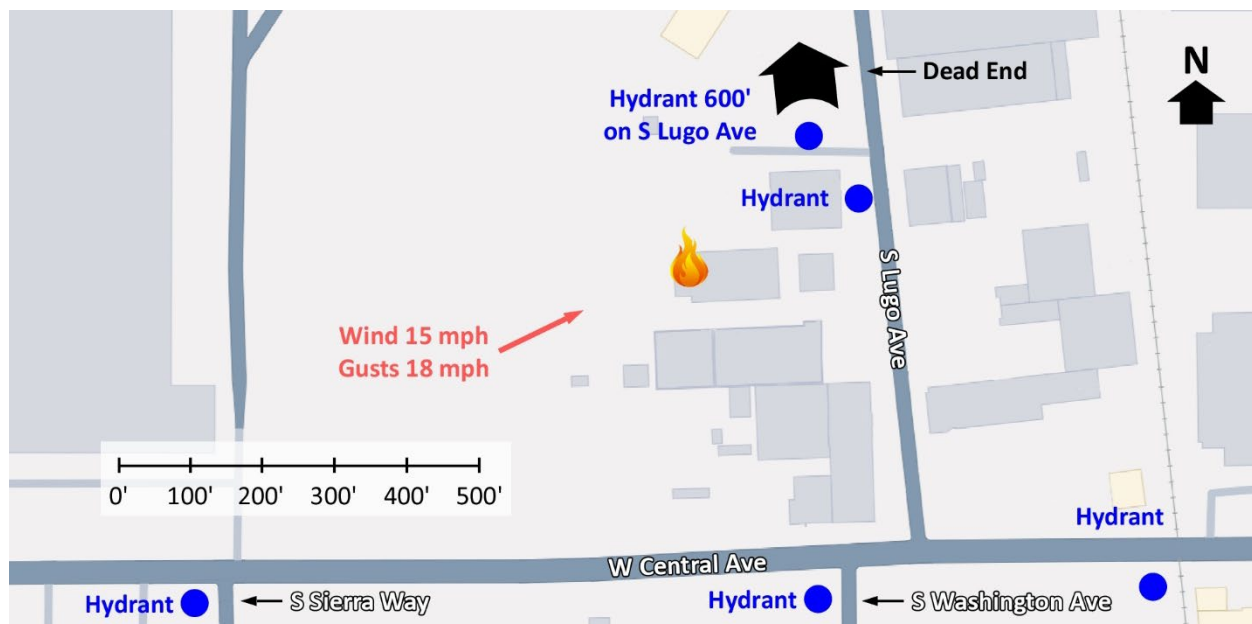
Learning Outcomes

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 a pallet yard fire at 767 S Lugo Avenue, San Bernardino, California on June 18, 2022, at 17:12 (OnScene TV, 2022; Antonios & Cain, 2022, & Fontana Herald News, 2022). Review the map and photos (Figures 1-7) to gain an understanding of the area and building involved.

Figure 1. Map of the Incident Area



Note: Adapted from Google. (2024a). [Map, 767 S Lugo Avenue, San Bernardino, CA].

<https://bit.ly/3TqnS1x>.

Figure 2. Aerial View



Note: Adapted from Google. (2024b). [Aerial view 767 S Lugo Avenue, San Bernardino, CA]. <https://bit.ly/3yRFZpQ>.

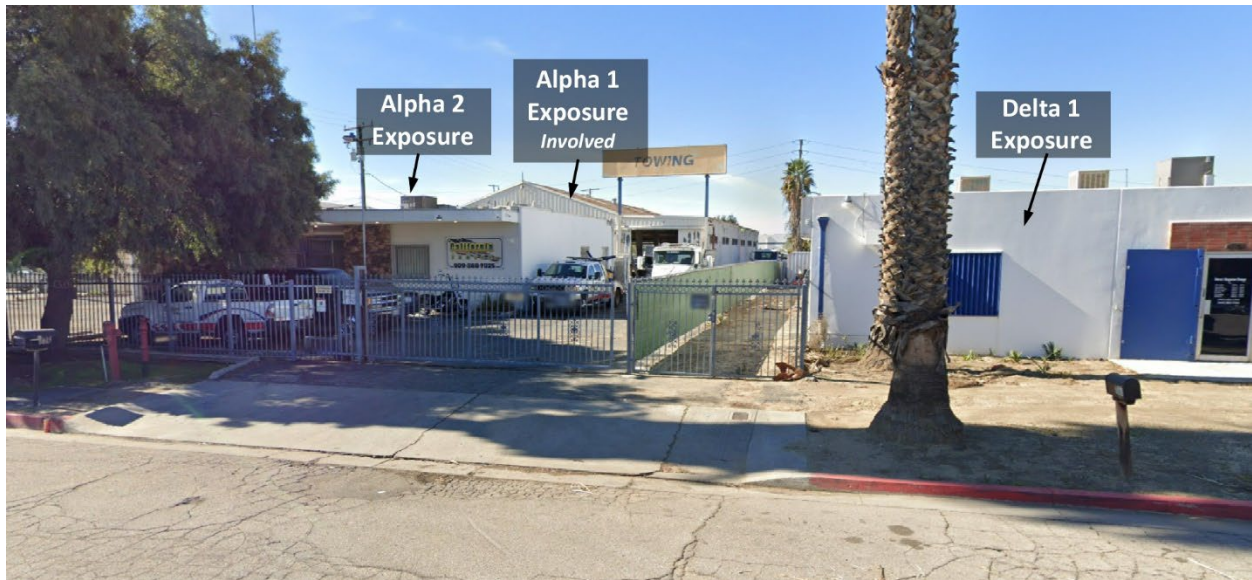
Hydrants are located on South Lugo Avenue and West Central Avenue as illustrated in Figure 1.

Figure 3. Side Alpha (784 S Lugo-767 S Lugo)



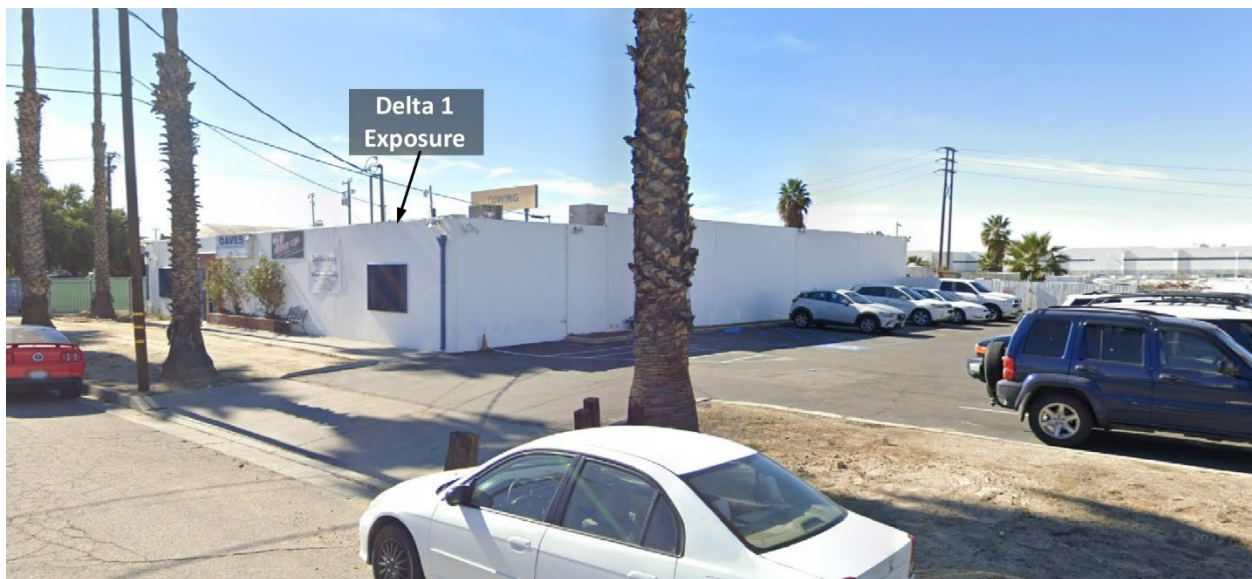
Note: Adapted from Google. (2019a). [Street view 467 S Lugo Avenue, San Bernardino, CA]. <https://bit.ly/4dXGCgE>.

Figure 4. Side Alpha (776-766 S Lugo Avenue)



Note: Adapted from Google. (2019b). [Street view 767 S Lugo Avenue, San Bernardino, CA].
<https://bit.ly/4g0HDGg>.

Figure 5. Alpha/Delta Corner-Delta 1 Exposure



Note: Adapted from Google. (2019c). [Street view 767 S Lugo Avenue, San Bernardino, CA].
<https://bit.ly/3Xjyr8V>.

Figure 6. Side Bravo (from W Central Avenue)



Note: Adapted from Google. (2024c). [Street view 767 S Lugo Avenue, San Bernardino, CA]. <https://bit.ly/4efWSd5>.

Figure 7. Access to Side Charlie from W Central Avenue



Note: Adapted from Google. (2024d). [Street view 767 S Lugo Avenue, San Bernardino, CA]. <https://bit.ly/4dEaPl8>.

The temperature is currently 77° F with wind from the west southwest at 15 mph with gusts to 18 mph (Weather Underground, 2022). You have been dispatched to 767 S Lugo Avenue at 17:12 for a commercial fire. 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?

You hear a command officer, three other engines, and an advanced life support ambulance with typical staffing for your agency go enroute. You will arrive from the east on West Central Avenue. The second engine will arrive from the same direction four minutes after you. The command officer will arrive shortly after the second engine. All other units dispatched on the first alarm will arrive after the command officer.

Watch the [incident video](#) (OnScene TV, 2022) from 00:12 to 00:22 and examine Figure 8 illustrating conditions on arrival.

Figure 8. Conditions on Arrival



Note: Adapted from OnScene TV. (2022). Massive fire rips through pallet yard & destroys 5 buildings | San Bernardino. <https://bit.ly/3WTfEQe>

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?

Initial reconnaissance indicates that the fire area is behind California Towing (776 South Lugo Avenue) and to the north of Metalco Steel & Supply (Exposure Bravo 1). Thick smoke and flying brands are spreading across South Lugo Avenue to the east northeast.

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.
6. Engine 2 arrives and reports that they are Level 1 on a hydrant on West Central Avenue, east of South Lugo Avenue, 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.

Reflect on your strategic decision-making and responses to questions 1 through 7 before answering the next six questions.

8. What was the problem?
9. What was getting in the way of achieving your tactical priorities?
10. Was there anything in this incident that could have hurt or killed you (right now)?

11. Was it reasonable to believe that the exposures to this outside fire were occupied?

12. Was there searchable space in the exposures?

13. If you believed it was reasonable that the exposures were occupied and there was searchable space, what could you do about it?

Watch the [incident video](#) (GWW09, 2024) from 00:40 to 02:40 and examine Figure 9.

Figure 9. Operations on Side Alpha



Note: Adapted from OnScene TV. (2022). *Massive fire rips through pallet yard & destroys 5 buildings | San Bernardino.* <https://bit.ly/3WTfEQe>

14. It appears that companies operating on West Lugo attempted to establish a cutoff point between the fire and Exposure Delta 1 using multiple apparatus mounted master streams and handlines (incident video from 01:04 to 01:18). Was this consistent with your initial actions? If so, what critical factors lead to your choice of cutoff point on Side Delta? If not, what did you do differently and what critical factors influenced your decision.

Examine Figure 10 illustrating post fire conditions before answering the next question.

Figure 10. Post Fire 3D Aerial View



Note: Adapted from Google. (2024e). [3d aerial view 767 S Lugo Avenue, San Bernardino, CA]. <https://bit.ly/4dBBbE7>.

15. What challenges would engine companies face in relocating the Side Delta cutoff point from between the Alpha 2 and Delta 1 Exposures to the Delta Side of the Delta 1 Exposure (taking advantage of the defensible space provided by the parking lot)? If you were tasked with moving your engine to cut the fire off at the Delta Side of the Delta 1 Exposure, how would you go about this (think down to the task level and the assignments you would give your crew)?

Examine Figure 11 illustrating downwind exposures before answering the next question.

Figure 11. Downwind Exposures



Note: Adapted from Google. (2024f). [3d aerial view 767 S Lugo Avenue, San Bernardino, CA].
<https://bit.ly/4711voG>.

16. If you observed many flying brands landing on downwind exposures, what communication would you have with IC #2? State the communication exactly as you would transmit it.

Additional Learning: Water supply operations for residential fires in an area with hydrants is generally straightforward and commonly involve a forward lay from a hydrant to the attack engine. Commercial and industrial fires requiring high flow rates quickly over tax residential water supply tactics. Relay and supplemental pumping are effective tactics for maximizing water supply capability when confronted with the need for high flow operations. Review and practice the following water supply tactics with your crew.

- **Relay Pumping:** Use of a supply engine to pump water through a supply line to another engine (either the attack engine in a two-engine relay, or to a relay engine in a multi-engine relay). The supply engine and relay engines (if applicable) pump at a standard discharge pressure of 120 psi and receiving engines maintain a minimum residual pressure of 20 psi. Discharge pressure may

be increased if needed, limited by hose service pressure, and the capability of pumping apparatus.

- **Taking Over a Hydrant:** When an attack engine is operating off a forward lay from a hydrant it may be necessary to put a pump on the hydrant to increase flow rate by relaying water to the attack engine. This necessitates the supply engine “take over the hydrant” by briefly interrupting water flow to connect the supply engine to the hydrant and the supply line to the supply engine. It is essential to maximize efficiency and minimize the interruption of water supply when performing this tactic.
- **Supplemental Pumping:** This tactic is used to improve water flow when engines are pumping from hydrants on smaller water mains. A supply line is laid from an attack engine operating on a low flow hydrant to a hydrant on a larger main and a supply engine relays water to the attack engine (which is operating off the low flow hydrant). This increases the flow rate by reinforcing the water supply provided by the small main.

References

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