# In-Station Training

***TM 24-47 Residential Fire***

## Author

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## Purpose

When a fire is showing on the first floor near the entry point, exterior application using a quick hit can be an effective method to quickly reduce heat release rate and transition to the interior for fire control can be accomplished quickly. When the fire is on an upper floor exterior application can still be effective, but transition will likely be slower. This presents an interesting tactical question for IC #1, quick hit or go directly to interior attack?

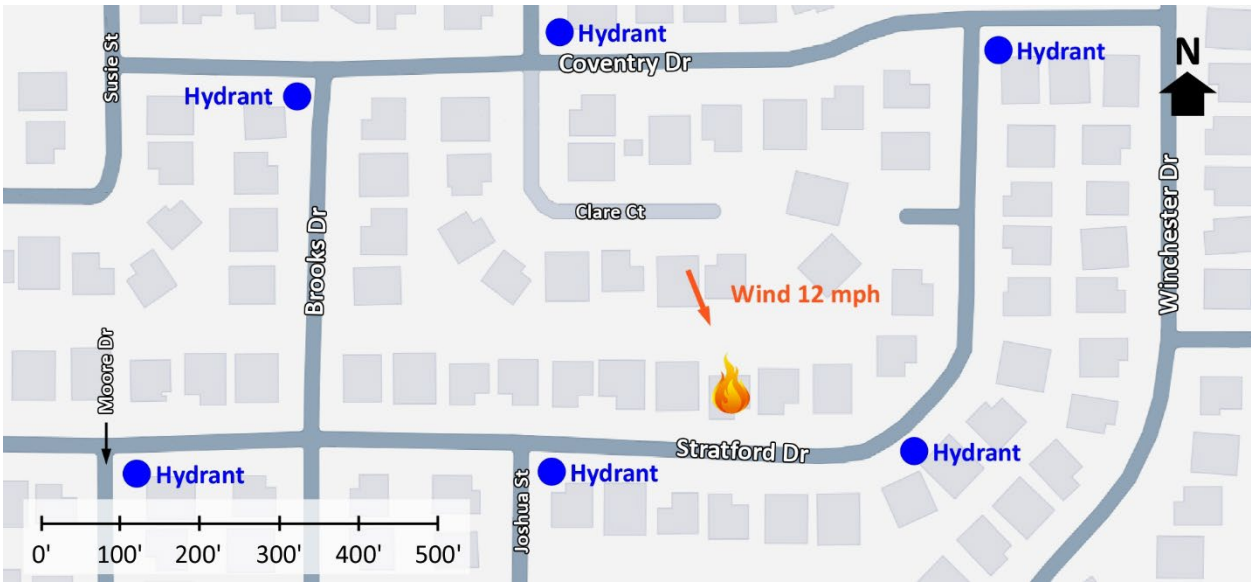
## Learning Outcomes

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 residential fire at 5119 Stratford Drive in Oakley, California on June 23, 2024, at 16:05 (ContraCostaNews, 2024 & CC News, 2024). Review the map and photos (Figures 1-6) to gain an understanding of the area and building involved.

Figure 1. Map of the Incident Area




*Note:* Adapted from Google. (2024a). [Map, 5119 Stratford Drive, Oakley, CA]. https://bit.ly/4feruMA.

Figure 2. Aerial View


*Note:* Adapted from Google. (2024b). [Aerial view 5119 Stratford Drive, Oakley, CA]. https://bit.ly/48ttfTW.

The closest hydrant is at the corner of Stratford Drive and Joshua Street. Additional hydrants are in the area as illustrated in Figure 1.

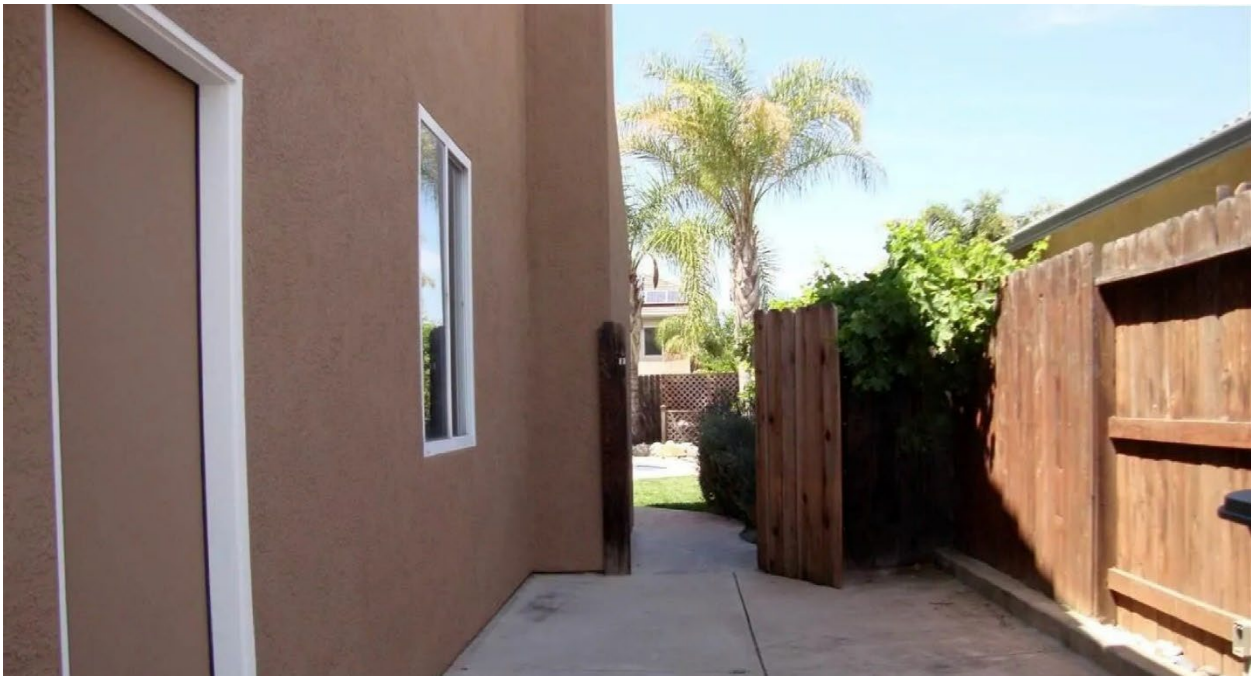
Figure 3. Side Alpha

*Note:* Adapted from Realtor.com. (2016). 5119 Stratford Dr, Oakley, CA 94561. https://bit.ly/4fsg6MS.

Figure 4. Alpha/Delta Corner

*Note:* Adapted from Realtor.com. (2016). 5119 Stratford Dr, Oakley, CA 94561. https://bit.ly/4fsg6MS.

Figure 5. Side Bravo



*Note:* Adapted from Realtor.com. (2016). 5119 Stratford Dr, Oakley, CA 94561. https://bit.ly/4fsg6MS.

Figure 6. Side Charlie

*Note:* Adapted from Realtor.com. (2016). 5119 Stratford Dr, Oakley, CA 94561. https://bit.ly/4fsg6MS.

The temperature is currently 96° F with wind from the north northwest at 12 mph (Weather Underground, 2024). You have been dispatched at 18:45 to 5119 Stratford Drive for a residential 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 west on Stratford Drive. 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.

While enroute, dispatch reports a fire on the second floor and that occupants are out of the house. Watch the first 00:15 of the incident video (ContraCostaNews, 2024) and examine Figure 7, illustrating conditions on arrival. Note: The incident video starts after the first arriving engine stretched an attack line through the door on Side Alpha (but before they achieved water on the fire).

Figure 7. Conditions on Arrival


*Note:* Adapted from ContraCostaNews. (2024). *Raw video: Oakley house fire* [video]. https://bit.ly/4foJYcW.

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 would you give your crew?

Two teenage occupants are across the street from the fire and report that everyone is out of the house. Conditions on Sides Bravo and Charlie are consistent with those observed on Sides Alpha and Delta.

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 at the hydrant on Stratford Drive at Joahua Street. 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 Main Fire Occupancy was occupied?

12. Was there searchable space?

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

Please note that the incident video started after the arrival of the first engine company. Watch the incident video (ContraCostaNews, 2024) from 00:15 to 04:00 before answering the next several questions.

14. Did wind speed and direction influence your tactical decision-making? If so, in what way?

15. The first arriving engine stretched through the door on Side Alpha to access the second floor without first making a quick hit from the exterior. Given the access to the building and likely layout and configuration of the interior of the building what were the advantages and disadvantages of this tactical approach (versus making a quick hit and then stretching to the interior)?

16. Do you believe that it was likely that fire had extended from Floor 2 to the attic? Why or why not? Explain your rationale based on the building, smoke, air track, heat, and flame (B-SHAF) indicators visible in the incident video?

17. As the first arriving engine how would you approach initial tactical ventilation of this building based on incident conditions?

18. The first arriving truck used their aerial ladder to access the roof (likely for vertical ventilation). Was vertical ventilation a good tactic based on the conditions presented by this incident? Why or why not?

***Additional Learning:*** The Underwriters Laboratories Fire Safety Research Institute (UL FSRI) studies on interior and exterior stream application identified the following tactical considerations:

- When there's fire venting … near the entry door, with no other openings on the structure, it's easy to determine the location of the fire. In this scenario, a transitional attack may be the most effective way to knock-back, confine, and suppress the fire" (Zevotek, Stakes, & Willi, 2018, p. 172).
- For a room and contents fire, the most important timing piece is the initial application of water into the compartment, to cool the compartment and knock back the fire prior to it extending outside the compartment. If that can be achieved faster by conducting an interior attack through the front door, then that is the most effective tactical choice (Zevotek, Stakes, & Willi, 2018, p. 176).

UL FSRI studies on coordinated fire control and ventilation extended understanding of the use of interior and exterior streams in multi-story buildings. This study noted that on first floor fires, additional water application from the exterior with the nozzle inside the opening (e.g., window) substantially slowed fire regrowth. When this secondary water application did not occur with fires on the second floor, the fire regrew quickly. Based on this observation, this research examined alternative means of water distribution.

> It should also be noted that even if the traditional straight stream, steep angle approach appears to have knocked down the fire, regrowth is an important concern until the nozzle team has made it to the fire compartment from the interior for complete fire extinguishment. To minimize regrowth potential, the lintel hit may be considered as an integral component to exterior water application regardless of the perceived effectiveness of the straight stream, steep angle approach (Regan, Bryant, & Weinschenk, 2020, p 387).

Watch *UL FSRI Multi-Family Experiment 3B* (Hartin, 2019) for an example of the effectiveness of combining steep angle straight stream application from the exterior when combined with a lintel hit. In this experiment, fire control was quickly achieved with a flow rate of 160 gpm.

Get out and stretch some hose. Practice positioning attack lines for exterior water application through a second floor opening and quickly stretching the line to the interior. If you don't have a building to practice on, use your imagination and focus your efforts on practicing nozzle pattern, angle of application, and movement from ceiling application back to hit the lintel.

## References

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