In-Station Training

TM 23-49 Residential Fire

Author

Chief Ed Hartin

Purpose

Knowledge of building construction and fire behavior are central to effective strategic and tactical decision-making. With wood frame buildings, the age of the structure provides a valuable clue to the type of wood frame construction that may be encountered.

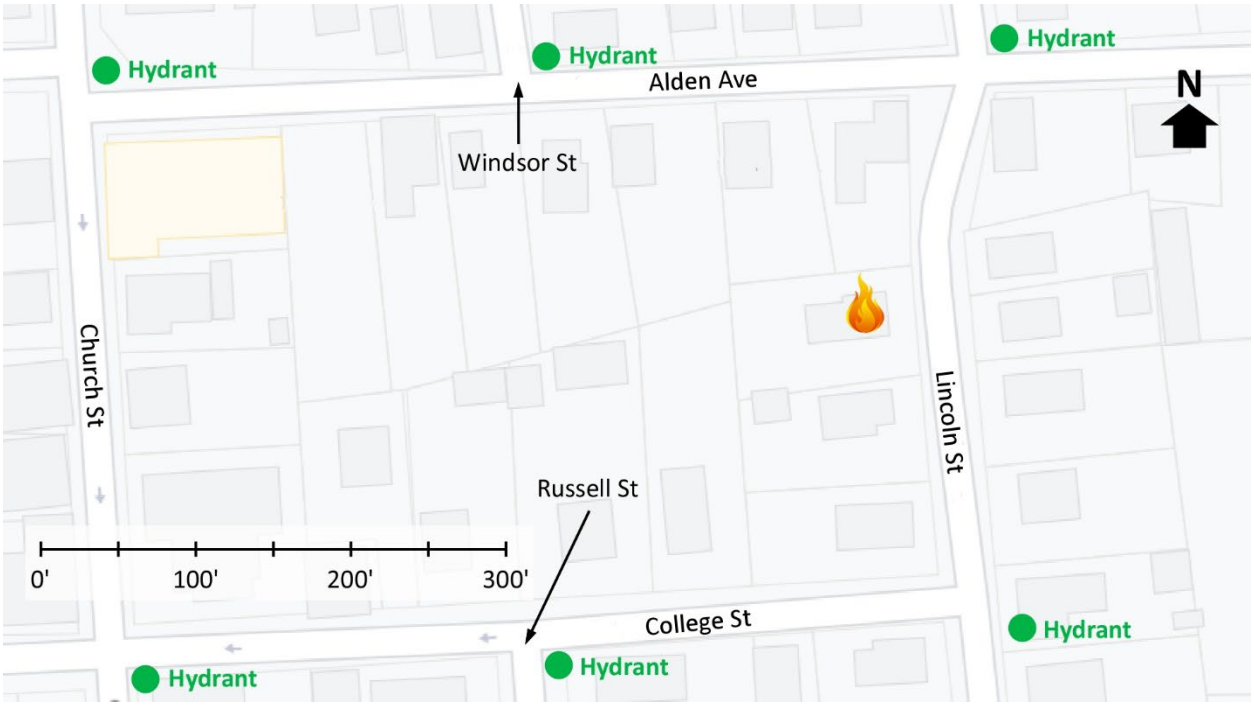
Learning Outcomes

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 57 Lincoln Street, Enfield, Connecticut on October 28, 2023, at 19:40 (Car 1 David Emergency Response Videos, 2023 & Jensen, 2023). 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. (2023a). [Map, 57 Lincoln Street, Enfield, CT]. https://bit.ly/3MljD3M.

Figure 2. Aerial View

Note: Adapted from Google. (2023b). [Aerial view, 57 Lincoln Street, Enfield, CT]. https://bit.ly/45NpPIt.

Hydrants are located on Lincoln Street on either end of the block at Alden Avenue and College Street. Additional hydrants are located on Alden Avenue and College Street as illustrated in Figure 1..

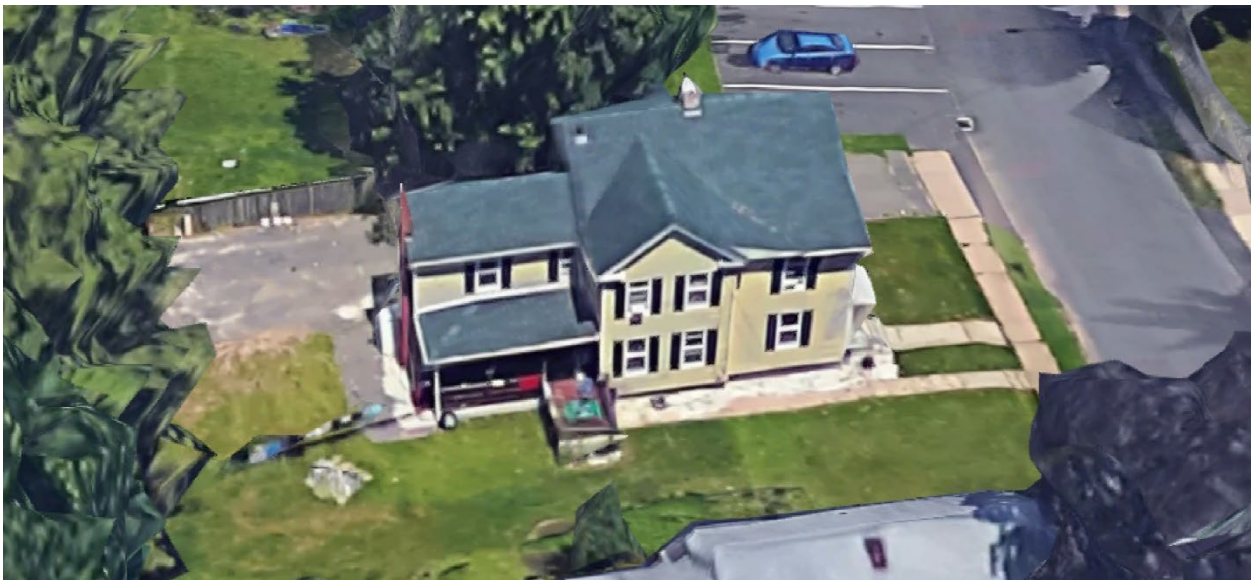
Figure 3. Alpha/Bravo Corner

Note: Adapted from Google. (2018a). [Street view, 57 Lincoln Street, Enfield, CT]. https://bit.ly/46M8EIP.

Figure 4. Alpha/Delta Corner

Note: Adapted from Google. (2018b). [Street view, 57 Lincoln Street, Enfield, CT]. https://bit.ly/3QhEAO1.

Figure 5. Side Bravo



Note: Adapted from Google. (2023c). [3d aerial view, 57 Lincoln Street, Enfield, CT]. https://bit.ly/3QBW8pq.

Figure 6. Side Charlie

Note: Adapted from Zillow. (2023). 57 Lincoln St, Enfield, CT 06082. Retrieved October 29, 2023, from https://bit.ly/3tLCOgq.

The temperature is currently 48° F with wind from the east northeast at 19 to 24 mph and gusty (Weather Underground, 2023). You have been dispatched to 57 Lincoln Street for a report of a residential fire at 19:40. 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?

While responding, you hear a command officer and another engine with typical staffing for your agency go enroute. You will arrive from the Lincoln Street six minutes after you, followed by the command officer. All other units dispatched on the first alarm will arrive after the command officer.

Examine Figure 7 illustrating conditions on arrival (incident video will subsequently illustrate conditions shortly after arrival and commencement of tactical operations).

Figure 7. Conditions on Arrival

Note: Adapted from Car 1 David Emergency Response Videos. (2023). Structure fire in Thompsonville on Lincoln St. | Fire Departments of Enfield [video]. https://bit.ly/3FzOgyi.

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?

Watch the incident video (Car 1 David Emergency Response Videos, 2023) from 01:03 to 01:33. Conditions on Side Charlie are consistent with those on Side Alpha and Bravo. Flames are visible from one window on Side Delta at the Alpha/Delta corner. A single occupant reports that he was the only one of eight family members that was home.

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. 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 (Car 1 David Emergency Response Videos, 2023) from 00:50 to 02:40 before answering the next several questions.

8. What building construction critical factors did you consider as part of your size-up? How would building construction influence fire control, checking for extension, and overhaul? Consider that this house was built in 1900.

9. The first arriving engine chose to establish a water supply using a forward lay from the hydrant at the corner of College Street and Lincoln Street. Was this consistent with your incident action plan? What factors influenced your choice of water supply tactics?

10. The first arriving company stretched through Side Alpha for fire control without making a quick hit on the fire in the Alpha/Delta corner of the building? Was this consistent with your incident action plan? What factors influenced your choice of fire control tactics? What are the advantages and disadvantages of stretching through Side Alpha without making a quick hit on the fire? What are the advantages and disadvantages of making a quick hit prior to entry?

11. Did the occupant's report that everyone was out of the house influence your decisions regarding primary search? Why or why not?

Additional Learning: *Watch Tactical Consideration: Transitional Attack with Fire Showing Near the Entry Point* (UL FSRI, 2018a) and *Tactical Consideration: If You Get Water Where it Needs to go, You Don't Need Much* (UL FSRI, 2018b).

For a deeper dive into these tactical considerations, read the relevant sections of *Impact of Fire Attack Utilizing Interior and Exterior Streams on Firefighter Safety and Occupant Survival: Full Scale Experiments* (Zevotek, Stakes, & Willi, 2018).

- Transitional Attack with Fire Showing Near the Entry Point on Pages 172-175
- If You Can Get Water to Where it Needs to Go, You Don't Need Much on Pages 186-188

Consider that these full-scale experiments were conducted in a one-story, wood frame building with platform construction. How would extension into structural voids (particularly in balloon frame construction) influence these tactical considerations?

In structural firefighting, once a fire involving building contents is knocked down, it is essential to quickly check for extension into walls or ceilings. A thermal imager (TI) is a useful tool in this process but will not always allow you to identify if the fire has extended into voids. If there is any doubt, it is necessary to open the walls and ceiling in the fire area to visually check for extension. If the fire has extended into structural voids, it is generally necessary to open walls and ceilings to allow adequate distribution of water on the surfaces of the void to achieve fire control and extinguishment. There are significant differences in this process when dealing with sheetrock or lath and plaster. Watch *The Punch Technique* (Fire Engineering, 2017) and *Lath and Plaster Overhaul* (2020). Grab some tools and walk and talk through these techniques with your crew.

References

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