In-Station Training

TM 23-16 Vehicle Fire with Extension

Author

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Purpose

Use of the strategic decision-making model requires that firefighters and fire officers recognize critical fireground factors within the ongoing context of incident operations. In part, this requires ability to recognize current fire behavior and structural stability and project these conditions in the near to mid-term based on tactical and task level capabilities of the available resources.

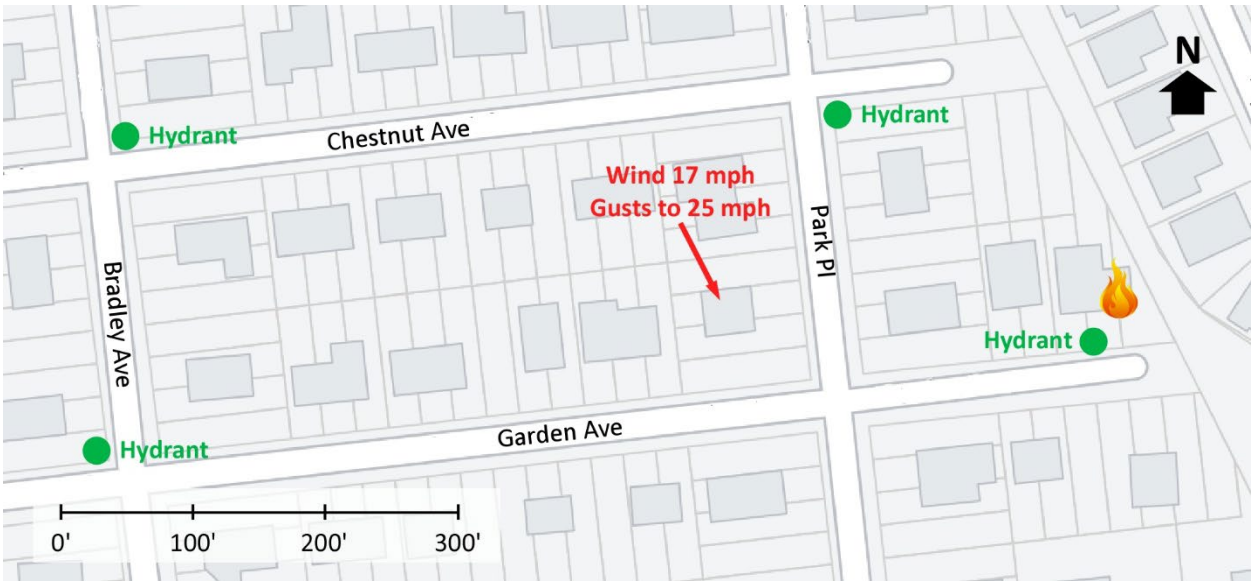
Learning Outcomes

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 vehicle fire with extension to the house at 39 Garden Avenue in Brick Township, New Jersey on April 2, 2023, at 14:18 (Jersey Shore Fire Response, 2023 MidJersey News, 2023). Review the map and photos (Figures 1-5) to gain an understanding of the area and building involved.

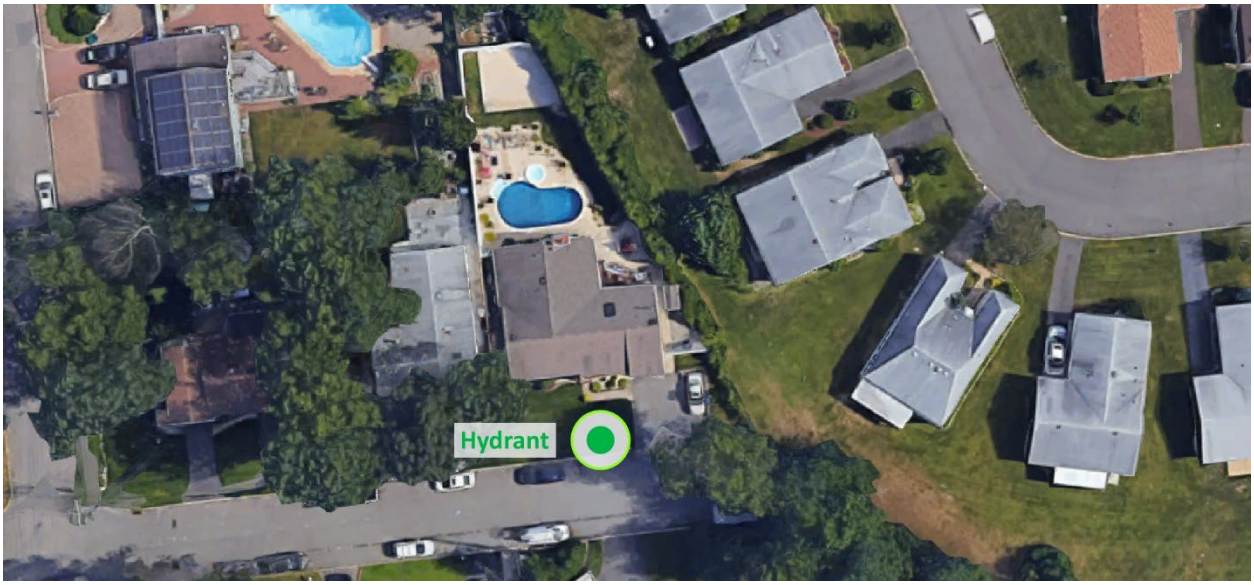
Figure 1. Map of the Incident Area



Note: Adapted from Google. (2023a). [map 39 Garden Avenue, Brick Township, NJ]. http://bit.ly/3zBOFPy.

The closest hydrant is located directly in front of the Main Fire Occupancy and other hydrants are in the area as illustrated in Figures 1 and 2.

Figure 2. Aerial View



Note: Adapted from Google. (2023b). [aerial view 39 Garden Avenue, Brick Township, NJ]. http://bit.ly/40G85gD.

Figure 3. Alpha/Bravo Corner

Note: Adapted from Google. (2022a). [street view 39 Garden Avenue, Brick Township, NJ]. http://bit.ly/40LACkM.

Figure 4. Alpha/Delta Corner

Note: Adapted from Google. (2022b). [street view 39 Garden Avenue, Brick Township, NJ]. http://bit.ly/3MlauZO.

Figure 5. Side Charlie

Note: Adapted from Zillow. (2020). *39 Garden Avenue, Brick, NJ 08724*. https://bit.ly/3zwGgeq.

You have been dispatched to 39 Garden Avenue for a vehicle fire. You are the company officer or AIC of the first arriving engine and have your company's typical staffing. Temperature is 48° F with wind at 17 mph and gusts to 25 mph from the north northwest (Weather Underground, 2023).

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 second engine with typical staffing for your agency go enroute. The second engine will arrive approximately eight minutes after you. You are arriving from the west on Garden Avenue. A short time after you go enroute, dispatch advised that callers report extension to the house at this address and upgrade the assignment to a residential fire. You hear a command officer go enroute and anticipate that they will arrive shortly after the second engine. All other resources dispatched on the initial alarm for a vehicle fire and upgrade to a residential fire will arrive after the command officer.

2. Based on this additional information, what critical factors would you consider when dispatched and during response and what conversations would you have with your crew while responding?

Watch the incident video (Jersey Shore Fire Response, 2023) from 04:00 to 04:20 and examine Figure 6 illustrating conditions on arrival.

Figure 6. Conditions on Arrival

Note: Adapted from Jersey Shore Fire Response. (2023). Pre-arrival 2 alarm structure fire Brick New Jersey 4/2/23 [video]. https://bit.ly/3U9Hq9e

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

4. 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?

As you exit the apparatus, bystanders advise that the homeowner went back inside the house as you arrived. Conditions on Side Bravo are consistent with those observed from Side Alpha with no smoke showing on Side Charlie.

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

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

7. State the tactical assignment you would give the next arriving engine exactly as you would transmit it.

8. 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 (Jersey Shore Fire Response, 2023) from 04:20 to 07:00 before answering the next several questions.

9. Describe the conditions you would have anticipated in the living area of the house (e.g., living room, kitchen, hallways, and bedrooms). What building, smoke, air track, heat, and flame (B-SAHF) fire behavior indicators led to your conclusion?

10. In this video, the occupant who re-entered the building was removed by a police officer. If this had not been done, what level of staffing would be required on the first arriving company to locate and remove the occupant? Why?

11. What fire conditions would you expect to exist in the attic? Specifically identify the stages of fire development (incipient, growth, fully developed, and decay) and burning regime (fuel or ventilation limited)?

12. The firefighters operating the initial attack line addressed the exterior fire on Side Alpha and to a lesser extent the car fire before transitioning to the interior. Was this effective? Why or why not?

Watch the incident video (Jersey Shore Fire Response, 2023) from 08:00 to 08:30 and the incident video from 16:00 to 16: 15 before answering the next question.

13. What tactical options could be used to address the fire in the attic? Which of these options (individually or in combination) would have been most appropriate in this incident?

Additional Learning: The B-SAHF (building, smoke, air track, heat, and flame) model for reading the fire was developed by Station Officer Shan Raffel, of Queensland (Australia) Fire and Rescue Service and Chief Ed Hartin, East County Fire and Rescue (then Battalion Chief with Gresham Fire and Emergency Services). Read *Fire Development and Fire Behavior Indicators* (Hartin, 2008) and watch the incident video (Jersey Shore Fire Response, 2023) from the beginning. Apply the B-SAHF model and consider how the fire behavior indicators (viewed wholistically) could inform your tactical and task level decision-making at this incident.

Firefighting, like warfighting, takes place in a dynamic and rapidly changing environment where tactical and task level actions have an impact that may change the context. The difference is that fire is not a sentient enemy, it is a physical and chemical process. Understanding decision-making in this context aids firefighters and fire officers in developing tactical and task level decision making skills. Gary Klein's

recognition primed decision-making (RPD) model (Klein, 1998) and Colonel John Boyd's OODA loop are often used to explain or illustrate decisions and action in dynamic environments.

Read *OODA Versus RPD: Reconciling Models of Cognition and Conflict* by John Schmidt (2023) for an overview of RPD and the OODA loop. Think about how RPD and the OODA loop apply to tactical and task level decision-making on the fireground. Use this week's 10-Minute Training to examine your decision processes. Building, smoke, air track, heat, and flame (B-SAHF) fire behavior indicators and recognition and understanding of structural characteristics are considered from a wholistic perspective in fireground decision-making. Recognition of current and projected fire behavior and structural stability are dependent on experience, real or synthetic (developed through simulation)!

References

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