In-Station Training

TM 25-29 Residential Fire

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Purpose

Selection and placement of initial attack lines can be a critical decision on the fireground. How do you choose between small and large attack lines, portable master streams, and apparatus mounted master streams for fire control and exposure protection?

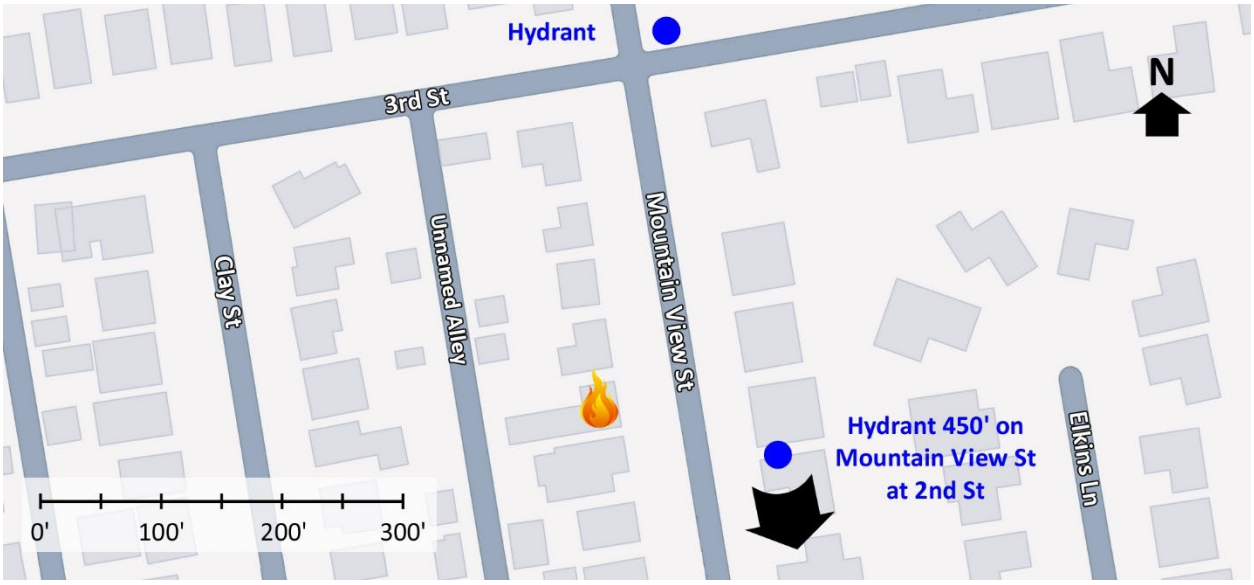
Learning Outcomes

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 639 Mountain View Street, Filmore, California on Tuesday, June 24, 2025, at 08:16 (Traffic News LA, 2025, The Filmore Gazette, 2025, & Broadcastify, 2025). Review the map and photos (Figures 1-6) to gain an understanding of the building and area involved.

Figure 1. Map of the Incident Area



Note: Adapted from Google. (2025a). [Map, 639 Mountain View Street, Filmore, CA]. https://bit.ly/4nzgH4n.

Figure 2. Aerial View

Note: Adapted from Google. (2025b). [Aerial view 639 Mountain View Street, Filmore, CA]. https://bit.ly/4lianga.

The closest hydrant is at the intersection of Mountain View Street and 3rd Street. In addition, there is a second hydrant to the south at the intersection of Mountain View Street and 2nd Street as illustrated in Figure 1.

Figure 3. Alpha/Bravo Corner

Note: Adapted from Google. (2025c). [Street view 639 Mountain View Street, Filmore, CA]. https://bit.ly/3I943ZP.

Figure 4. Side Alpha

Note: Adapted from Google. (2025d). [Street view 639 Mountain View Street, Filmore, CA]. https://bit.ly/44f4zhm.

Figure 5. Alpha/Delta Corner

Note: Adapted from Google. (2025e). [Street view 639 Mountain View Street, Filmore, CA]. https://bit.ly/4lGpqjA.

As illustrated in Figure 6, the Main Fire Occupancy has a detached garage that is accessed from the unnamed alley that runs parallel to Mountain View Street from 2nd Street to 3rd Street.

Figure 6. Side Charlie (from the unnamed alley)

Note: Adapted from Google. (2022). [Street view 639 Mountain View Street, Filmore, CA]. https://bit.ly/3TL93GB.

The temperature is currently 62° F with wind from the south southwest at 5 mph (Weather Underground, 2025). **You are the company officer of an engine company**. It is Tuesday, June 24th, and you have been dispatched along with two other engines, a ladder company, medic unit, and command officer to 639 Mountain View Street at 08:16 for a residential fire. The engines and ladder have four-person staffing[1].

Time starts now! Answer the first eight questions within the next 10 minutes. Decide and put your answers in the form of communication you would have with your crew, other companies, and the first arriving command officer. Save discussion for after answering the first eight questions.

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

You hear a command officer, two other engines, a ladder company, and an advanced life support ambulance go en route. You will arrive first, approaching from the south on Mountain View Street. The ladder company will arrive from the same direction shortly after you. The second engine will arrive from

[1] If your first alarm deployment is different, use your own resource assignment and staffing with the first and second arriving resources typical for your agency (e.g., two engines vs. engine and ladder).

the north several minutes after the ladder company. 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 responding, you observe a column of smoke from several blocks away. Watch the first 00:40 of the incident video (Traffic News LA, 2025) and examine Figure 7, illustrating conditions on arrival.

Figure 7. Conditions on Arrival

Note: Adapted from Traffic News LA. (2025). *Pre arrival structure fire, Filmore California*. Retrieved July 8, 2025, from https://bit.ly/44lQaQB

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?

An occupant reports that everyone is out of the house. A large volume of black smoke is pushing from windows and an open doorway on Side Charlie. Neighbors report a civilian with minor burn injuries in the alley near the garage (Exposure Charlie 1).

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. Ladder 1 arrives and advises that they are Level 1 on Mountain View Street at 2nd Street. State the tactical assignment you would give them exactly as you would transmit it.

7. Engine 2 arrives and reports that they are Level 1 on a hydrant on Mountain View Street and 3rd Street. State the tactical assignment you would give them exactly as you would transmit it.

8. Based on observed and 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 one through eight before answering the next six questions. Give some thought to what cues, patterns, or anomalies (differences from conditions that you would anticipate) inform your answers.

9. What was the problem?

10. What was getting in the way of achieving your tactical priorities?

11. Was there anything in this incident that could have hurt or killed you (right now)?

12. Was it reasonable to believe that the Main Fire Occupancy was occupied?

13. Was there searchable space?

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

Watch the remainder of the incident video (Traffic News LA, 2025) and examine Figure 8 before answering the next several questions.

Figure 8. Water Application

Note: Adapted from Traffic News LA. (2025). *Pre arrival structure fire, Filmore California*. Retrieved July 8, 2025, from https://bit.ly/44lQaQB

At this incident, the first arriving engine company stretched a 2 ½" attack line on the Alpha/Bravo Corner for fire control and to protect the Bravo 1 Exposure. A 1 ¾" line was also stretched on Side Alpha for fire control.

15. Was the choice of a 2 ½" attack line consistent with your choice of fire control and exposure protection tactics? If you chose a different initial attack tactic, what factors influenced your decision?

16. What factors influenced the effectiveness of the 2 ½" attack line? How could the effectiveness of the initial water application have been improved?

In this incident, companies initially operated from the exterior but subsequently transitioned to interior operations and used vertical ventilation to remove smoke from the building. Examine Figure 9 illustrating post fire conditions before answering the next question.

Figure 9. Post Fire Conditions

Note: Adapted from The Filmore Gazette. (2025). *House fire Leads to arson arrest.* https://bit.ly/4l9KFu6

17. . Given fire conditions and the size and configuration of the building was vertical ventilation a reasonable tactic? Why or why not? If not, how did or would you have approached tactical ventilation?

Additional Learning: Effective water application depends on flow rate and distribution of water to accomplish the intended purpose; to cool gases, to cool surfaces, or to cool both gases and surfaces.

The house in the incident examined in this 10-Minute Training was built in 1951 and contained two bedrooms and one bathroom in its 1136 square feet (ft^2) of living space (Ventura County Assessor, 2025). Discuss the following two questions with your crew and have a look at the National Fire Academy

method for estimating the needed fire flow. Given the level of involvement on arrival, what flow rate do you think was necessary to quickly achieve fire control? How do you know?

There are several methods that can be used to estimate or calculate the required flow rate for fire control. One method is to simply use your experience (which may work quite well if you have been to many fires and have paid attention to flow rate). However, if you do not have a large base of experience to draw on or need to apply flow rate estimation in a preplanning context, other methods are necessary. One of the most common methods used in the United States is the National Fire Academy Fire Flow Formula.

In the mid-1980s the development team for the National Fire Academy Field course Preparing for Incident Command developed this formula to provide a simple method for estimating the flow requirements for offensive, interior operations where a direct attack was used to control and extinguish the fire. The NFA Fire Flow Formula is not based on science (at least not physical science). The developers tapped into another useful source of information, knowledge of experienced fire officers.

There are three major parameters used for the scenarios based on these plot and floor plans.

- All scenarios were designed to involve offensive interior firefighting operations and as such, fire involvement was limited to 50% or less of the total floor area of the building.
- Operations were to be conducted as they normally would, with initial operations started by the first arriving company and additional tactics implemented as resources arrived.
- Primary search and ventilation tactics would be performed concurrently with fire control operations.

The students' responses were collected and analyzed. For each scenario, when the floor area of the involved area in square feet (ft^2) was divided by the total flow rate in gallons per minute (gpm) for all hoselines used for attack, backup, and exposure protection; the average result was three. Turning this around, the flow rate in gpm can be determined by dividing the area of involvement in ft^2 by three.

The course development team extended the application of this formula to include estimated flow required for exposure protection by adding 25% of the flow rate required for fire control (as determined by the basic formula) for each exposure. The full formula is as follows:

$$\text{Needed Fire Flow} = \left(\frac{\text{Length x Width}}{3} + \text{Exposure Charge} \right) \text{x \% of Involvement}$$

Exposure Charge: 25% of the Basic Fire Flow per Exposure

The most common application error is the belief that the formula determines the flow rate required for fire attack. This is incorrect! The formula determines the total flow rate required for attack, backup, and exposure protection lines. Use of this formula to determine the flow rate for the initial attack line (or lines) will greatly overestimate the required tactical rate of flow as at least half the base fire flow is needed for backup lines.

In residential firefighting operations, ineffective water application does not generally result from too low of a flow rate, it results from inadequate distribution. If you put water where it needs to go you don't need much! (UL FSRI, 2018).

References

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