In-Station Training

TM 25-16 Reported Residential Fire

Author

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Purpose

When dispatched to a residential fire, the initial dispatch information and computer aided dispatch (CAD) notes provide responders with an anticipation of what they will find on arrival and potential actions. Sometimes conditions and actions match this anticipation and other times it does not.

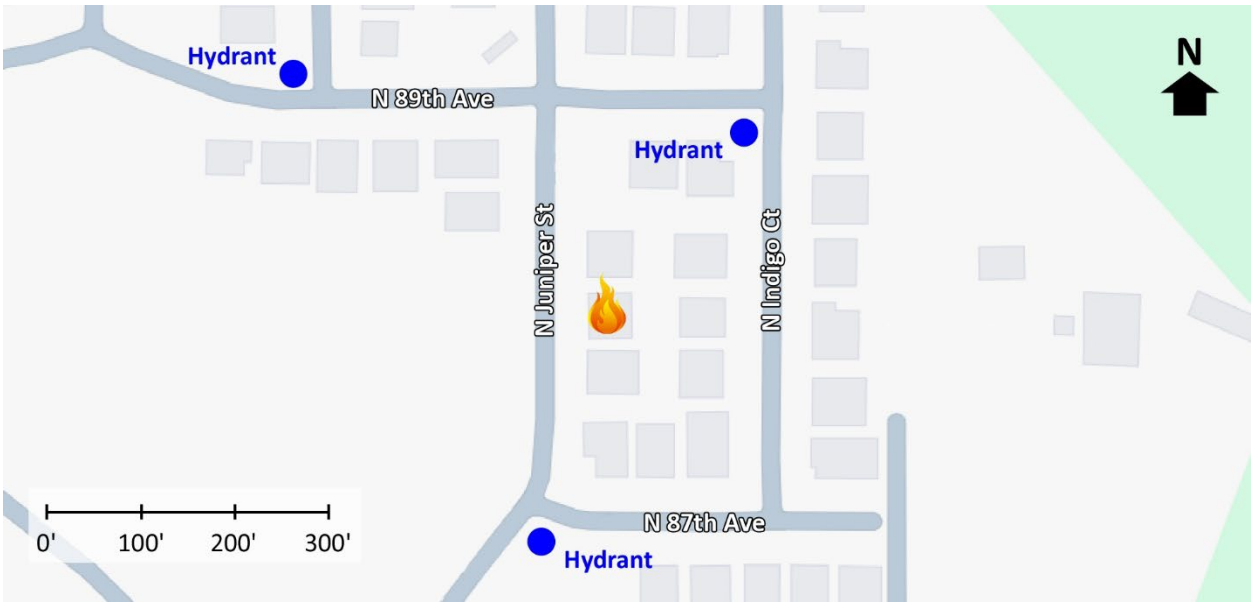
Learning Outcomes

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 reported residential fire at 8734 N Juniper Street, Camas, Washington on Thursday, January 23, 2025, at 05:38 (CWFD, 2025, ECFR, 2025; & CRESA, 2025). 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. (2025a). [Map, 8734 N Juniper Street, Camas, WA]. https://bit.ly/4grfW8U.

The closest hydrant is at the intersection of N Juniper Street and N 87th Avenue. Other hydrants are in the area as illustrated in Figure 1.

Figure 2 Aerial View

Note: Adapted from Google. (2025b). [Aerial view 8734 N Juniper Street, Camas, WA]. https://bit.ly/42ZT6BW.

Figure 3. Alpha/Delta Corner

Note: Adapted from Google. (2022a). [Street view 8734 N Juniper Street, Camas, WA]. https://bit.ly/40R85fY.

Figure 4. Side Alpha

Note: Adapted from Google. (2022b). [Street view 8734 N Juniper Street, Camas, WA]. https://bit.ly/4gm6DXD.

Figure 5. Alpha/Delta Corner

Note: Adapted from Google. (2022c). [Street view 8734 N Juniper Street, Camas, WA]. https://bit.ly/40QH5xm.

Figure 6. Side Charlie (similar house in the same development).

Note: Adapted from Zillow. (2023). 8721 N Indigo St LOT 54, Camas, WA 98607. Retrieved February 18, 2024, from https://bit.ly/4b6vrBW.

The temperature is currently 30° F with no appreciable wind from the north (Weather Underground, 2025). **You are the company officer of an engine company**. It is Thursday, January 23rd, and you have been dispatched along with two other engines, a ladder company, medic unit, and command officer at 05:38 to 8734 N Juniper Street for a residential fire. The engines and ladder have four-person staffing[1]. Based on your knowledge of the community, you recognize that this is a new neighborhood of one- and two-story homes constructed since 2020.

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.

You hear a command officer, two additional engines, ladder company, and an advanced life support ambulance go en route. Initial dispatch information indicates that the caller reported lots of smoke in the upstairs hallways. You will arrive first, approaching from the south on North Juniper Street. The ladder company will arrive from the same direction two minutes after you. The second engine will arrive from the south shortly after the first engine company. The command officer will arrive after the second engine. All other units dispatched on the first alarm will arrive after the command officer.

[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).

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

Examine Figure 7 illustrating conditions on arrival.

Figure 7. Conditions on Arrival

Note: Adapted from Adapted from Google. (2022c). [Street view 8734 N Juniper Street, Camas, WA]. https://bit.ly/40QH5xm.

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 and that there is a strong smell of smoke upstairs. Conditions on Side Charlie are unremarkable with no smoke visible from the exterior of the house.

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.

Investigating conditions on the interior you find an odor, but no visible smoke on Floor 2. Thermal imaging on Floor 2 shows ambient temperature on all surfaces (floor to ceiling).

6. Ladder 1 advises that they are Level 1 on North Juniper at North 87th Avenue. 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 North Juniper at North 87th Avenue. State the tactical assignment you would give them 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.

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?

Battalion 1 arrives and completes command transfer, assigning your company and Ladder 1 to continue investigating the source of the odor of smoke.

15. Given the information you have to this point, how will you approach determining the source of the odor of smoke? Describe the specific actions you will take and why.

Accessing the garage, you observe a forced hot air furnace like the one shown in Figure 8. Using a thermal imager, the exterior of the furnace does not show an elevated temperature, and it is cool to the touch.

Figure 8. Forced Hot Air Furnace (representative example)

Note: Adapted from Carrier R. (025). *Carrier furnaces.* https://bit.ly/4gRfH70.

16. Why might the exterior of the furnace show ambient temperature despite a problem resulting in excessive heating of a component inside the furnace?

17. Would you investigate the furnace more closely? If so, how would you approach this task?

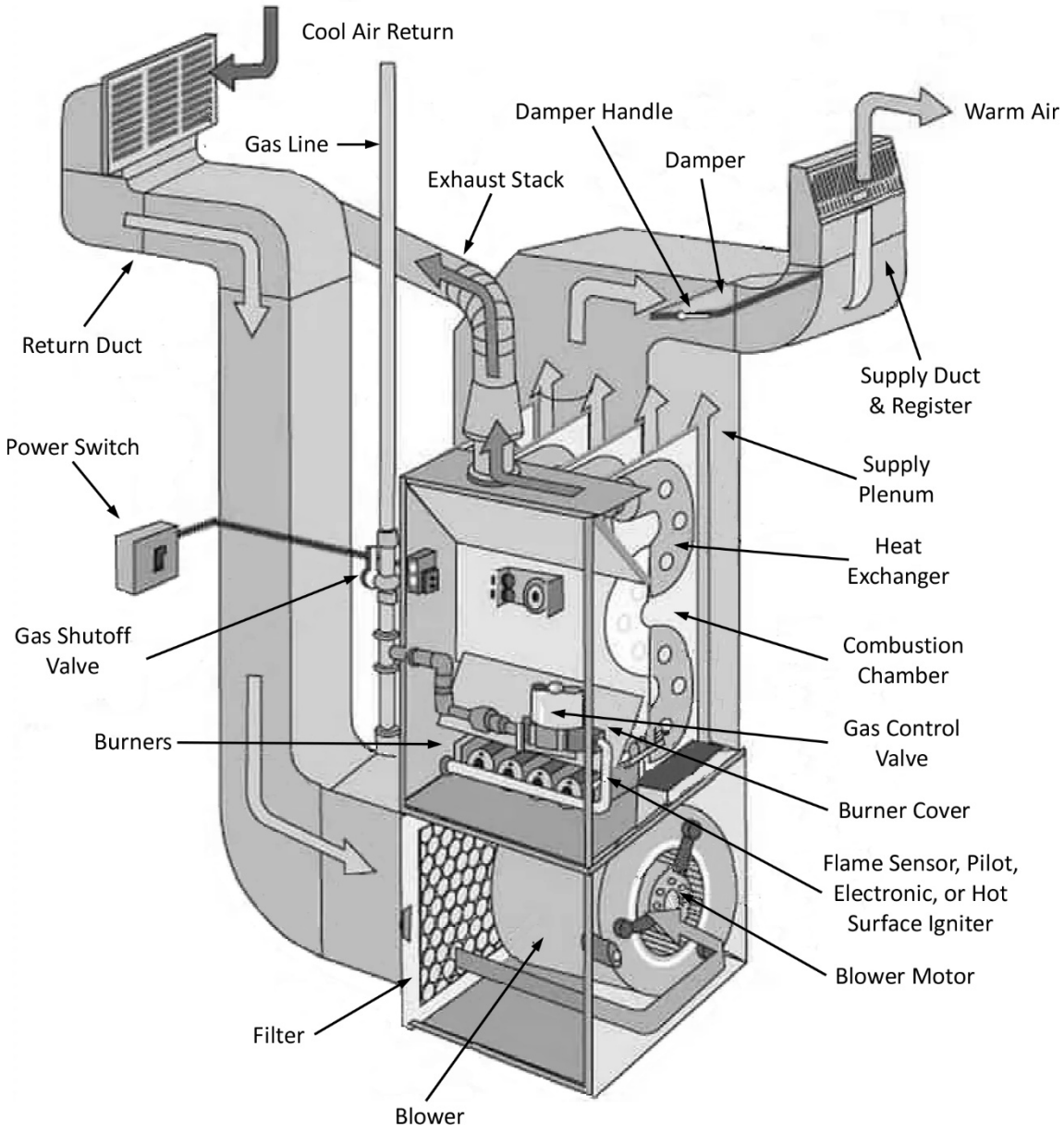
Additional Learning: Sometimes the source of a smoke condition or odor of smoke is obvious, other times it is not, requiring a bit of problem solving. Read *Investigating Strange Odors* (Greg Jakubowski). In this incident, the likely culprit was a clogged filter in the hot air furnace. There are multiple reasons why a hot air furnace may produce an odor of something burning or event discharge of smoke from hot air registers including:

- ***Dust Accumulation:*** If the furnace has not run for a while, dust and debris might have settled on the heating elements. When the furnace is on, the burning smell could come from this accumulated dust burning off. This should quickly dissipate (HomeAireCare, 2023).
- ***Clogged Filters:*** A dirty or clogged air filter can restrict airflow causing the furnace to overheat, leading to a burning smell as the system works harder to circulate air (HomeAireCare, 2023 & Around the Clock Heating and Air Conditioning, 2025).
- ***Electrical Malfunction:*** Electrical components within the furnace, like wiring or motors, can become overheated, resulting in a burning odor (HomeAireCare, 2023).
- ***Damaged or Seized Motor Bearings:*** Failure of bearings in the electric blower motor can result in overheating of the motor, resulting in an odor of something burning (early) or a fire inside the furnace.
- ***High Gas Pressure:*** A regulator maintains gas pressure within the designed operating range. If the regulator malfunctions or fails, gas pressure may increase beyond design limits. When gas pressure is excessive the furnace produces increased heat increasing fire risk (Around the Clock Heating and Air Conditioning, 2025).
- ***Cracked Heat Exchanger:*** A heat exchanger can develop cracks due to the constant heating and cooling. Cracks may be small and unnoticeable when the furnace is off but can expand as metal heats up during operation. A cracked heat exchanger can result in release of carbon monoxide or may result in a fire inside the furnace (Around the Clock Heating and Air Conditioning, 2025).

Important! Remember that hot air furnaces are insulated, and the exterior surface can be at ambient temperature even when there are overheated components or even incipient flaming conditions inside the furnace. Remove exterior access panels to investigate conditions inside the furnace.

Examine Figure 9 and review the components of a hot air heating system and identify where malfunctions may occur and how you would investigate potential causes of smoke or odor from the heating system.

Figure 9. Hot Air Heating System Components



Note: Adapted from Stone, S. (2022). *Main parts of a furnace* (with diagram). Retrieved January 29, 2025, from https://bit.ly/42RZjQD.

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