In-Station Training

TM 25-44 Commercial Fire

Author

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Purpose

Fires involving tires, particularly when substantial amounts of tires are involved can present significant fire suppression and environmental challenges and are resource intensive.

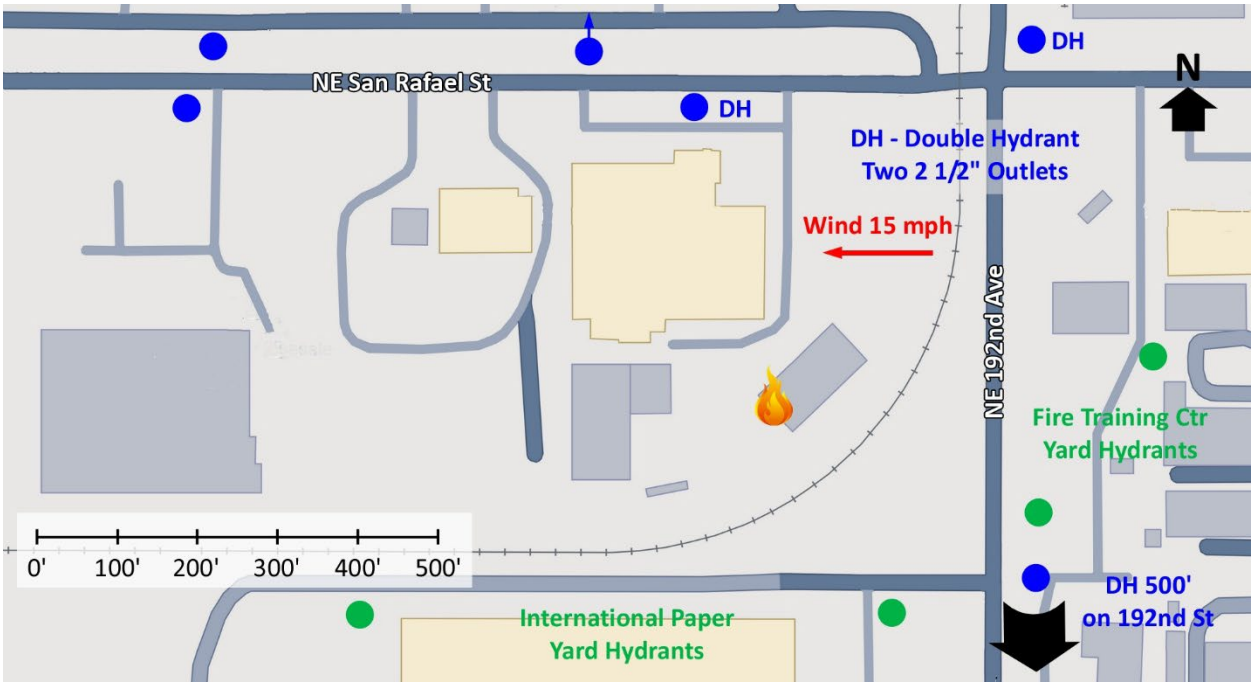
Learning Outcomes

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 commercial fire at Purcell Tire Retreading 19004 NE San Rafael Street, Gresham, OR on Friday, August 22, 2025, at 15:19 (Walker, 2025; KPTV Fox 12, 2025; Benham, 2025; Broadcastify, 2025a, 2025b, 2025c, 2025d; Ross, 2025; & I. Wynn personal communication September 5, 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



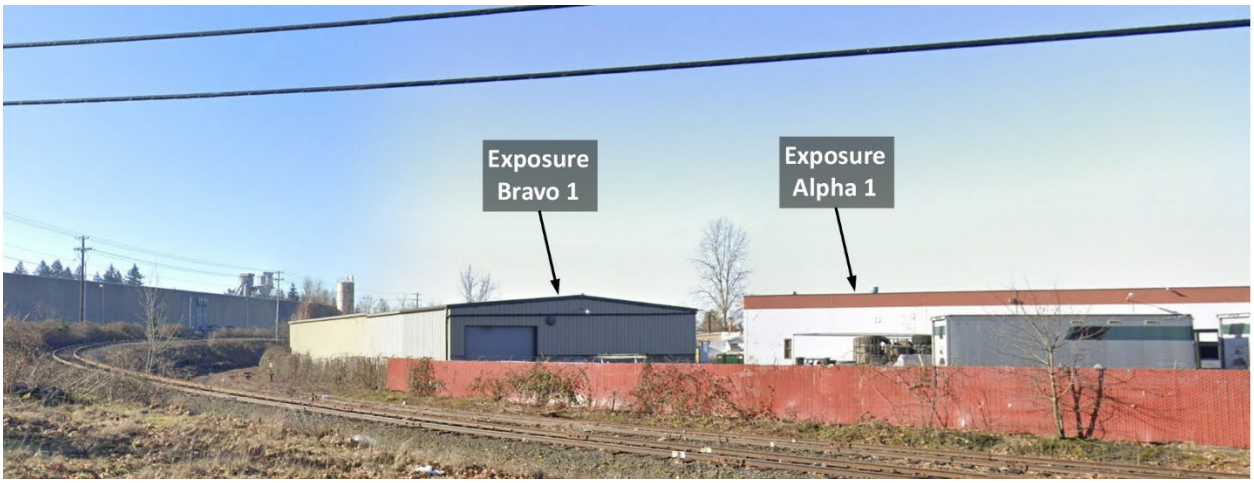
Note: Adapted from Google. (2025a). [Map, 19004 NE San Rafael Street, Gresham, OR]. Map data ©2025 Google. https://bit.ly/4fRPaaP.

The closest hydrant is directly in front of the facility and additional hydrants are in the area as illustrated in Figures 1 and 2.

Figure 2. Aerial View

Note: Adapted from Google. (2025b). [Aerial view 19004 NE San Rafael Street, Gresham, OR]. Imagery © Google, Imagery © Airbus Maxar Technologies, Map Data © 2025. https://bit.ly/4766Ddm.

Figure 3. Approach from Northeast 192nd Avenue (Side Bravo)



Note: Adapted from Google. (2022a). [Street view 19004 NE San Rafael Street, Gresham, OR]. ©2025 Google. https://bit.ly/4mutoMR.

Figure 4. Facility Entrance from Northeast San Rafel Street (Side Alpha)

Note: Adapted from Google. (2022b). [Street view 19004 NE San Rafael Street, Gresham, OR]. ©2025 Google. https://bit.ly/4oUpNcI.

Figure 5. Bravo/Charlie Corner 3D Aerial View

Note: Adapted from Google. (2025c). [3d aerial view 19004 NE San Rafael Street, Gresham, OR]. ©2025 Google https://bit.ly/4fPy1i5,

Figure 6. Charlie/Delta Corner 3D Aerial View

Note: Adapted from Google. (2025d). [3d aerial view19004 NE San Rafael Street, Gresham, OR]. Map data ©2025 Google https://bit.ly/4n0HntU.

The **temperature is currently 99° F with wind from the east at 15 mph** (Weather Underground, 2025). **You are the company officer of an engine company**. It is Friday, August 22nd, and you are dispatched at 15:19 as a single company for smoke in the area one block west of NE 190th place (two blocks away from your station). Your company has four person staffing[1]

Time starts now! Answer the first nine 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 nine questions.

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

Exiting the station onto 192nd Avenue you observe a large column of black smoke immediately to the southwest of the intersection of NE 192nd Avenue and San Rafel Street. You request a first alarm assignment.

[1] If your company staffing is different, use your own staffing level.

Upgrading to a commercial first alarm, the dispatcher adds **four other engines**, **two ladder companies**, medic unit, and two **command officers** to the assignment. The engines and ladder have four-person staffing[2].

2. The actual incident location is only one block from your station, what critical factors would you consider when in the very brief time before you arrive? What conversations would you have with your crew during response?

You approach this incident from the south on Northeast 192nd Avenue and then turn left onto Northeast San Rafel Street to access the facility. As you arrive, you hear two command officers, four other engines, two ladder companies, and an advanced life support ambulance go en route. Due to the proximity of this facility to your station, the next engine and ladder company will arrive approximately four minutes after you, followed by the first command officer.

Watch the first 00:53 of the incident simulation video (Hartin, 2025) and examine Figure 7 illustrating conditions on arrival.

Figure 7. Conditions on Arrival

Note: Adapted from Hartin, E. (2025) *10-minute training 25-44 incident simulation* [Fire Studio 7 video]. https://bit.ly/48M4T9Y.

[2] If your first alarm deployment is different, use your own resource assignment and staffing.

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 would you give your crew?

You are unable to access Side Charlie of the Bravo Exposure due to a fence and cannot access Exposure Charlie due to fire and smoke conditions.

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 follow up report exactly as you would transmit it to dispatch.

As you begin initial operations, conditions change. Watch the incident simulation video from 00:54 to 01:30 and examine Figure 8.

Figure 8. Changing Conditions

Note: Adapted from Hartin, E. (2025) *10-minute training 25-44 incident simulation* [Fire Studio 7 video]. https://bit.ly/48M4T9Y.

7. Engine 2 arrives and reports that they are Level 1 on a hydrant at 192nd Avenue and San Rafael Street. State the tactical assignment you would give them exactly as you would transmit it.

8. Ladder 1 arrives and reports that they are Level 1 on 192nd Avenue. State the tactical assignment you would give them exactly as you would transmit it.

9. Based on 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 nine before answering the next six questions. Think about what cues, patterns, or anomalies (differences from conditions that you would anticipate) inform your answers.

10. What was the problem?

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

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

13. Was it reasonable to believe that the exposures were occupied?

14. Was there searchable space?

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

The remaining questions are based on actual incident operations. As in this 10-Minute Training, the first arriving engine was dispatched on a smoke investigation and called for a first alarm assignment immediately on exiting the fire station (one block south of the incident). The company officer's initial radio report:

> To all companies responding this is going to be 19004 off San Rafael, stated that this was Northwest Retreaders [prior occupant], huge tire factory, heavy black smoke showing, appears to have multiple large tires on fire impinging on the building, Engine 74 is going to have command, we're pulling a 2 ½" attack line for offensive fire attack (Broadcastify, 2025a).

The first arriving engine pulled into the facility and stretched a 2-1/2" attack line to a position just to the right of Exposure Bravo 1 for application of water to piles of large tires that were involved in fire. The first arriving engine did not establish a water supply (believing that there was a hydrant inside the facility). After determining that this was not the case, IC #1 tasked the second arriving engine with doing so. The first arriving command officer arrived prior to any of the additional companies and assumed command.

Figure 9. Actual Conditions on Arrival

Note: Adapted from Ross, C. (2025). [Purcell Tire Retreading incident photos].

16. Were the actions of the first arriving engine at this incident consistent with the incident action plan you implemented in this 10-Minute Training? What critical factors influenced your strategy and choice of attack position?

17. The closest hydrants to this incident were “dual hydrants” equipped with two 2 ½” outlets and no large outlet. However, these hydrants were on large water mains suitable for the industrial area served. Later in incident operations, the first arriving engine experienced insufficient water supply as multiple master streams were placed into operation. How could water supply from nearby hydrants be maximized?

It may seem unlikely that you could develop significant flow from a hydrant that only has two 2 ½” outlets, but Figure 10 illustrates a 1978 Mack CF 1500 gpm engine developing a flow rate of 2100 gpm from the hydrant located 500’ to the south of this incident during Gresham Fire Department’s Apparatus Operator Academy 2005-01! The engine was connected to the hydrant using two short sections of 5” hose (using 2 ½” x 5” adapters). The static pressure at the hydrant was 80 psi and the residual when flowing 2100 gpm was 40 psi (still a bit more flow rate from the water system, but the engine was at max capacity).

Figure 10. Gresham Fire Department Engine 79 (Training Division) Pumping for Maximum Flow

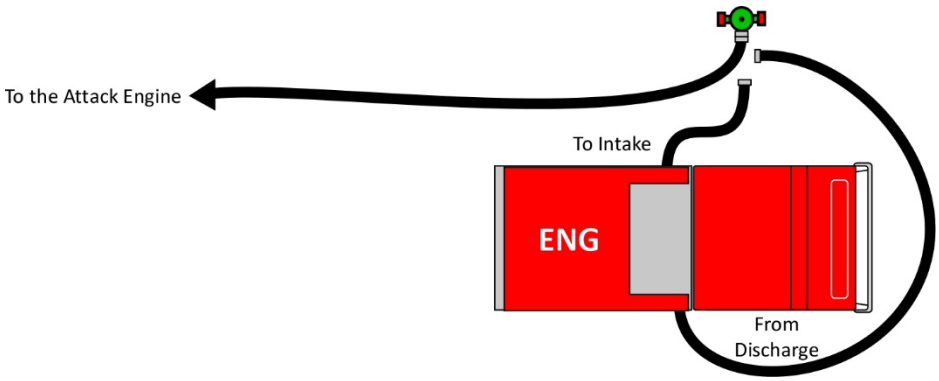
Note: Adapted from Hartin, E. (2005). [Apparatus operator academy 05-01 photo, relay and special water supply tactics].

Additional Learning: When adequate water supply (gpm) is available at a hydrant, but there is insufficient residual pressure or when there is substantial friction loss in the supply line(s) from the hydrant to the fire, taking over the hydrant and pumping the supply lines can significantly improve fireground water supply. Take your company out and practice the evolution to "take over a hydrant" and establish a relay to the attack engine.

10-Minute Training 25-39 discussed use of a Task Force Tips Oasis ™ Hydrant Assist Valve when taking over a hydrant. But what if your agency does not use this type of hydrant valve. All is not lost. Connecting to a hydrant that is already in use for in-line pumping without a hydrant assist valve requires a bit of forethought and an effective sequence of action to minimize interruption of the continuous water supply. The general sequence of operations is to:

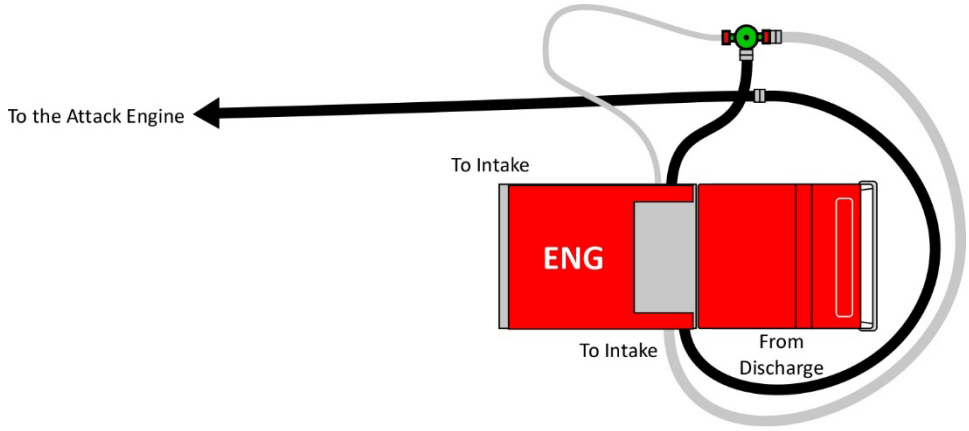
1. Position the apparatus to pump from the hydrant and leave the pump out of gear.
2. Connect hose to the suction inlet and discharge connection and stretch these lines to a position near the hydrant. Prepositioning the hose makes connection to the hydrant and hoseline that is in use quicker and easier).
3. Open suction and discharge connections to speed passage of water once you are connected to the hydrant.
4. Advise the attack engine that you are ready to take over the hydrant. This is a critical step as the attack engine will experience a brief interruption in water supply from the hydrant and must change over to tank supply.

Figure 11. Ready to Take over The Hydrant



5. Close the hydrant, disconnect the supply line and connect it to your discharge line, connect your supply line to the hydrant, and reopen the hydrant. Water is now flowing through your pump to the attack engine (remember you opened suction and discharge connections in advance). This step should be accomplished in less than 60 seconds (from closing the hydrant to reopening the hydrant).
6. Engage the pump and confirm that water supply has been reestablished to the attack engine.
7. Slowly increase discharge pressure to 120 psi (or until residual pressure reaches 20 psi, whichever comes first).

Figure 12. Relay Established



8. Add a second large diameter supply line between the hydrant and the supply engine. If you are working with a triple hydrant (rather than a dual hydrant like the closest hydrants in this incident) add a third supply line between the hydrant and the supply engine (if you do not have a third large intake, use a small diameter line and connect it to the 2 ½" auxiliary inlet.

Use of a standard relay pressure 120 psi simplifies determining the maximum flow through the relay. 120 psi discharge-20 psi minimum residual=100 psi maximum friction loss in the hose lay. Divide 100 psi maximum friction loss by the length of the hose lay in 100' to determine the friction loss per 100' and use this value to determine what flow rate would result in that friction loss/100', telling you the flow rate that can be achieved with the given hose lay (if the hydrant will support that flow rate).

If the residual pressure at the attack engine reaches 20 psi as discharge pressure is increased, stop increasing the pressure. Then subtract 20 psi from your discharge pressure and repeat the calculation as above. Under these circumstances, this will tell you the maximum flow rate that you can develop.

Note that you can relay at higher pressure, up to the working pressure of your supply lines (common when using small diameter supply hose).

Also, identify an occupancy in your response area that presents a substantial or unusual hazard and get out and do a tactical walk around. Give some thought to potential tactical challenges (e.g., fuel type, arrangement and configuration, access, etc.) and how you might overcome them. Formal pre-plans are extremely useful, but so too is familiarity with your response area and pre-incident tactical discussions with your crew focused on tactical and task level challenges.

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