

Sugarloaf Fire Protection - District Wildland Intro

Intro

How do wildland fires start?

- Lightning, downed power line
- Human caused (campfires, old ashes, cigarettes, car exhaust, arson)
- MVA (burning car)

How can SLFPD trainees participate in wildland firefighting?

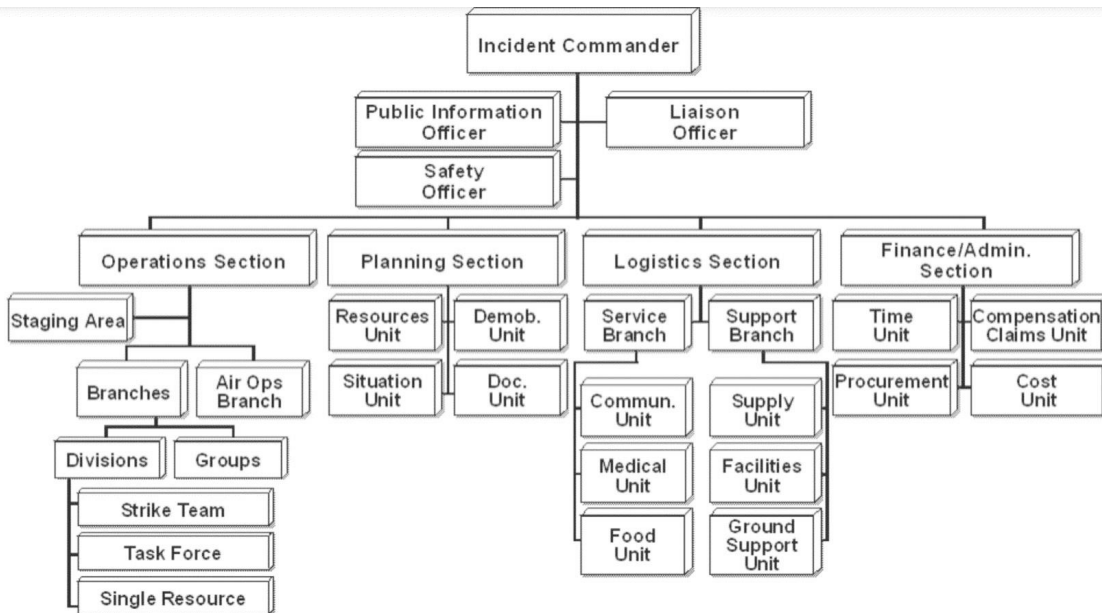
- trainees have to be red-carded to go on wildland calls and smoke report.
- trainees have to attach to a full member.
- trainees that are red-carded can help in neighboring districts (4Mile, Nederland).
- even if not red-carded there are many ways to help (deliver provisions, rehab trucks and equipment at the station, etc.)

Red card: S-130/S-190

<u>Pack Test – Arduous:</u> The 3 mile test in with a 45-pound pack in 45 minutes is strenuous, but no more so than duties of wildland firefighting.	<u>Field Test – Moderate:</u> The 2 mile test with a 25-pound pack in 30 minutes is fairly strenuous, but no more than the field duties assigned.	<u>Walk Test – Light:</u> The 1 mile walk test in 16 minutes is moderately strenuous but no more so than the duties assigned.
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Incident Command System

Management tool for responding to emergency situations. It establishes chain of command. Can be used for many types of incidents (flood, Search & Rescue, hurricane). Important – no freelancing. Always check in with IC at incident. Know who you report to.



The Fire Triangle

Oxygen Source:
Normal air contains 21% O₂. Fuel may also contain oxygen.

Heat Sources: Sun, Hot Surfaces, Sparks, Friction, Electrical Energy, others



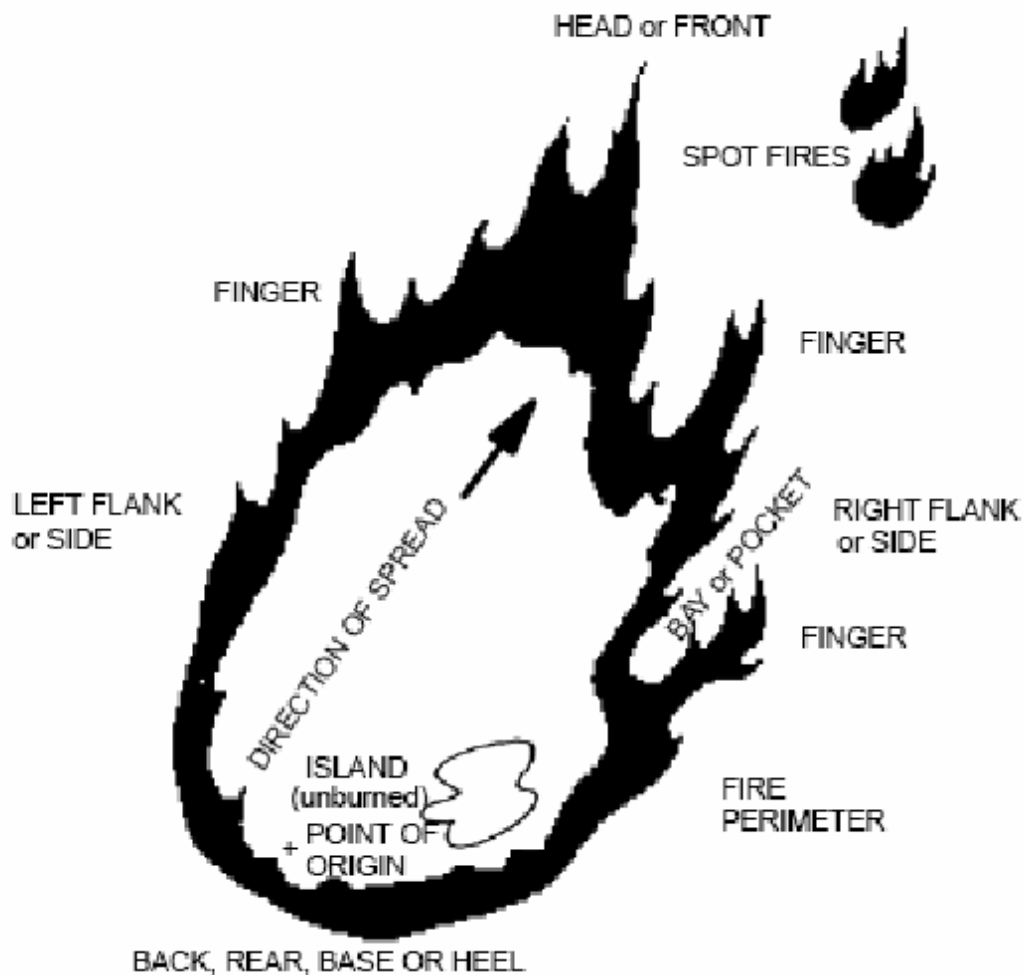
Fuel Sources: Can be a solid, liquid, or gas. Here are some examples.

Solids: Coal, Wood, Paper, Leather, Plastic, Sugar, Grain

Liquids: Gasoline, Alcohol, Paint, Olive Oil

Gases: Natural gas, Propane, Hydrogen, Carbon Monoxide,

Parts of the Fire:



How do we fight fires?

Speed is key. SLFPD must reach and fight fires quickly to ensure they do not grow to a size where direct attack becomes impossible.

Direct attack - A strategy in which firefighters work very close to the fire's edge, either building fireline or attempting to douse the flames directly with water or dirt. Direct attack can generally only be made if the flames are less than 4 feet long.



Indirect attack - A strategy in which firefighters build fireline far away from the fire's edge in preparation for its advance. Planned ignitions are set to burn out fuels ahead of the main fire, and fireline can be combined with existing natural barriers to strengthen the overall control line. Indirect attack is used when direct attack is impossible.

Control Line: A barrier that blocks the spread of a fire. It can include:

- natural breaks in the fuel source, such as rivers, lakes or roads.
- built control line is a strip of ground that has been dug up, burned out or otherwise cleared of fuel ahead of a fire's advance.

The width required to prevent flames or embers from crossing and igniting fuels on the other side depends on a number of variables, including wind and weather, fire intensity and terrain.

Fireline: The built portion of a control line, this is a strip of land that has been dug or scraped down to the layers of soil below the surface that have little combustible material and are unlikely to burn. Fireline is built by hand crews to help complete a control line and contain a fire.



Tools



Combi Tool

Hoe



McLeod



Swatter



Pulaski



Shovel

LCES

- Lookout
 - Have experience to recognize potential threats*
 - Be decisive*
 - Communicate clearly*
 - Be in a position to see potential threats and the entire crew*
 - Be in a safe location*
- Communication
 - Have a communication plan*
 - Command to retreat must be clearly understood by all*
- Escape Route
 - Easily traveled and lead away from the fire, directly to the safety zone*
 - If there is cut-off potential, two routes should be planned and discussed*
 - Establish new escape routes as the effectiveness diminishes*
- Safety Zone
 - Locations of adequate refuge from advancing fire*
 - Large enough for all who might use them*

Located for effectiveness

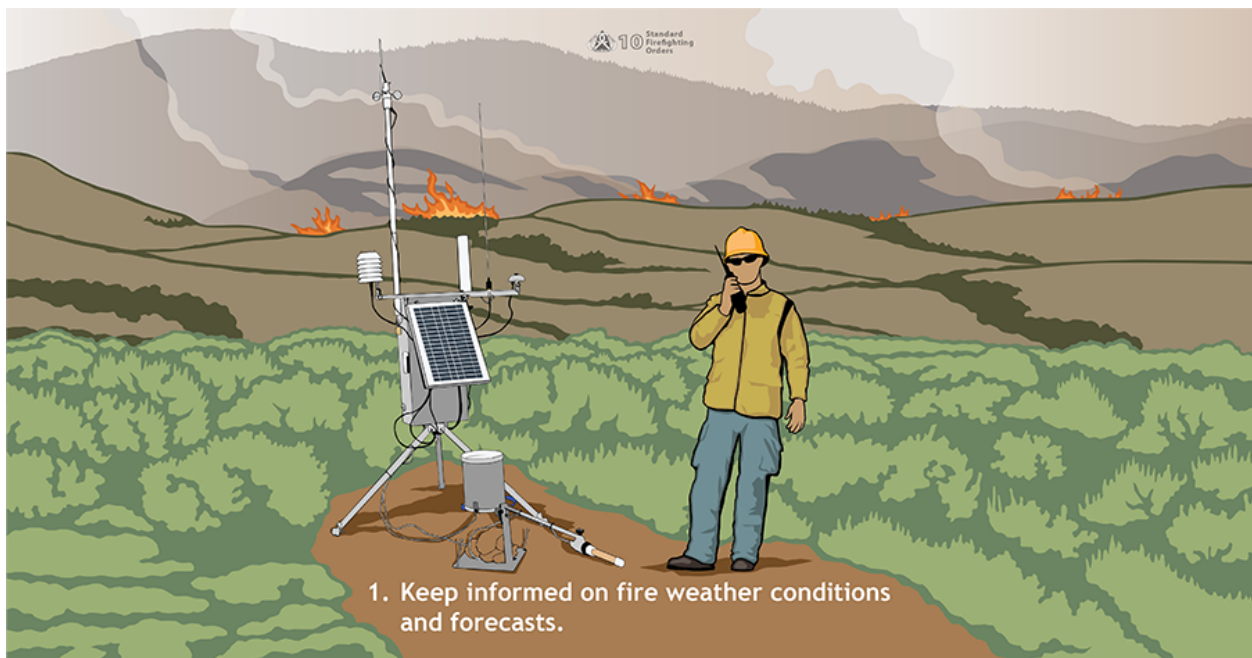
Large enough for protection without a fire shelter.

10 Standard Firefighting Orders and the 18 Watch Out Situations

The 10 Standard Firefighting Orders and the 18 Watch Out Situations, as referenced in the *Incident Response Pocket Guide (IRPG)*, PMS 461, provide wildland firefighters with a set of consistent best practices and a series of scenarios to be mindful of when responding to a wildland fire.

The 10 Standard Firefighting Orders are organized in a deliberate and sequential way to be implemented systematically and applied to all fire situations.

Click on image to enlarge.



1. Keep informed on fire weather conditions and forecasts.

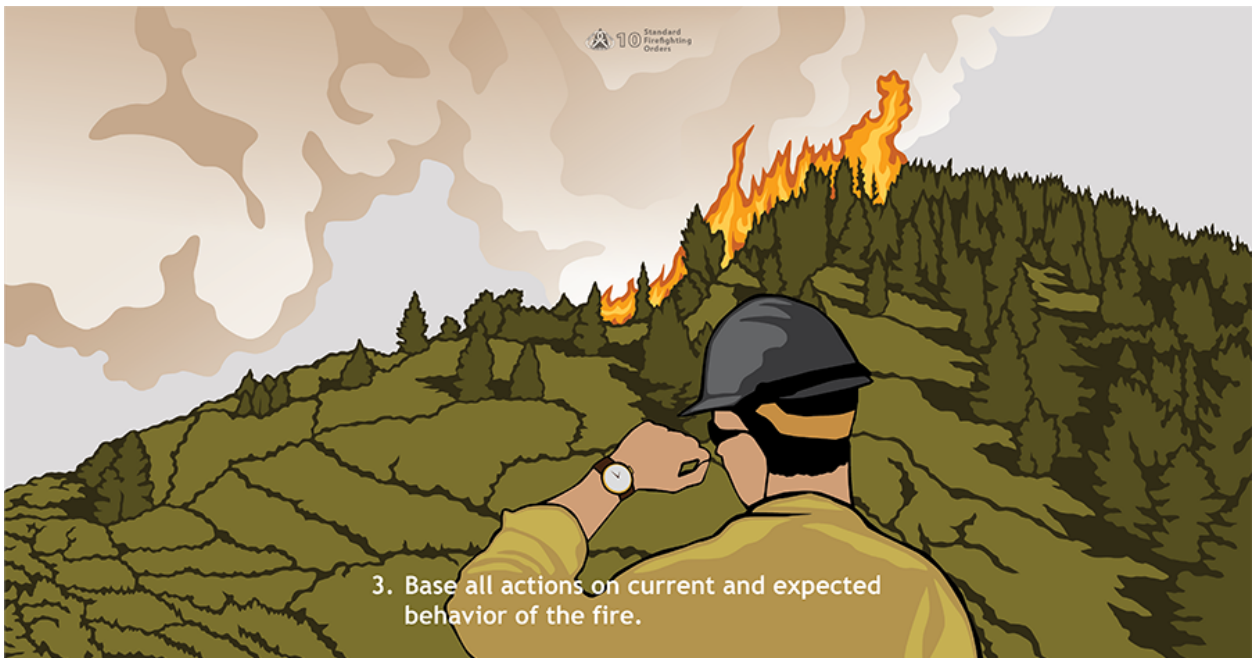
Weather conditions can significantly impact fire behavior, and weather forecasts help firefighters anticipate changes. This Standard Firefighting Order shows a remote automated weather station (RAWS) which sends real-time weather information to incident fire personnel.



2. Know what your fire is doing at all times.

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Current and accurate information about fire behavior and weather conditions is critical to firefighter safety. This Standard Firefighting Order demonstrates how lookouts are used to gather and communicate details on fire behavior.



3. Base all actions on current and expected behavior of the fire.

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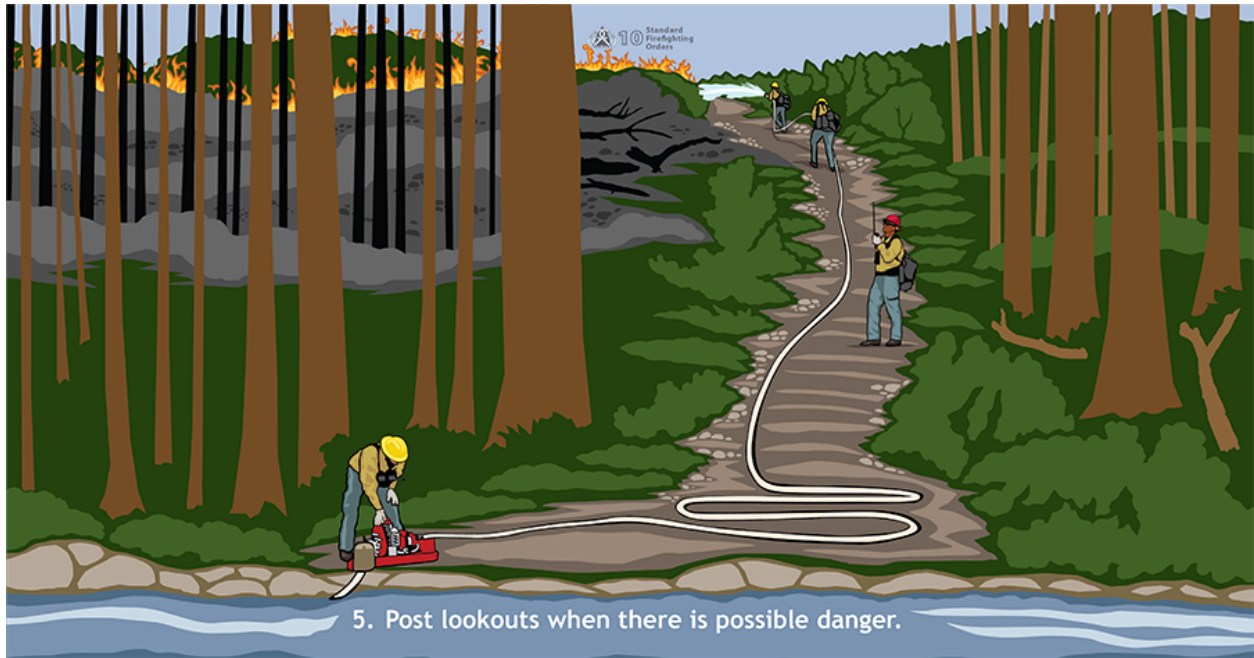
Fire managers make decisions throughout the day on how to suppress fires and best use

resources while protecting life and property. This Standard Firefighting Order depicts a firefighter observing increased fire behavior during a time of day when temperatures are high and relative humidity is low.



4. Identify escape routes and safety zones, and make them known.

Lookouts, Communications, Escape Routes, and Safety Zones (LCES) are the foundation to safe fire suppression actions. This Standard Firefighting Order shows a crew utilizing a predesignated escape route to safely move away from an active fire.



5. Post lookouts when there is possible danger.

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Lookouts provide time-sensitive information to firefighters. This Standard Firefighting Order demonstrates firefighters installing a pump and hose lay with a designated lookout to keep watch for and communicate possible hazards.

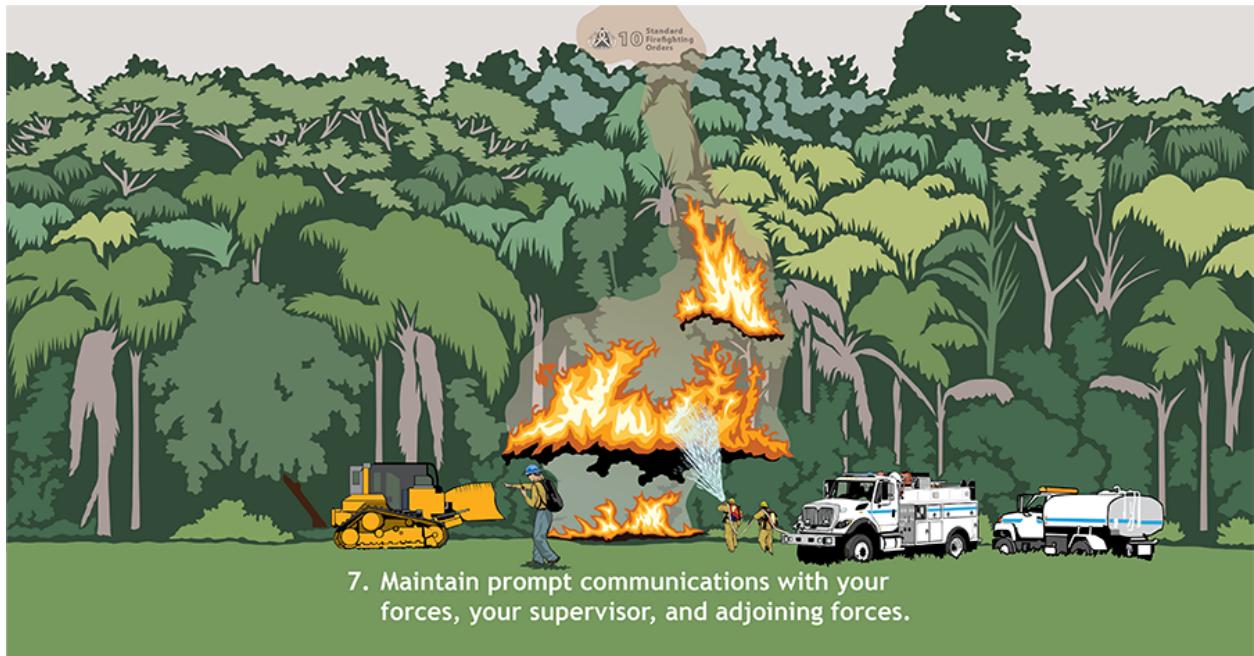


6. Be alert. Keep calm.
Think clearly. Act decisively.

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Remaining alert, keeping calm, thinking clearly, and acting decisively are important components of decision-making on wildland fire incidents. This Standard Firefighting Order illustrates a

supervisor providing direction and establishing leader's intent to help a crew working on a growing fire.



7. Maintain prompt communications with your forces, your supervisor, and adjoining forces.

The Incident Command System (ICS) relies on interagency communications between firefighting resources for collaborative fire suppression. This Standard Firefighting Order shows a variety of firefighting resources working together to effectively suppress a wildland fire.



8. Give clear instructions and be sure they are understood.

Briefings are opportunities to share information, plan tactics, and ask questions. This Standard Firefighting Order illustrates a briefing from a supervisor to the personnel working on the fireline.



9. Maintain control of your forces at all times.

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Building and maintaining crew cohesion promotes trust among crew members and leadership. This Standard Firefighting Order demonstrates a crew following direction from their supervisor to avoid hazards, including the approaching airtanker.



10. Fight fire aggressively, having provided for safety first.

The safety of firefighters and the public is always the top priority of wildland fire management agencies. This Standard Firefighting Order portrays an engine crew, with a clearly identified escape route in place, suppressing an active wildland fire .

The 18 Watch Out Situations are more specific and cautionary, describing situations that expand the 10 Standard Firefighting Orders with the intent that if firefighters follow the Standard Firefighting Orders and are alerted to the 18 Watch Out Situations, much of the risk of firefighting can be reduced.



1. Fire not scouted and sized up.

Wildland firefighters scout and size up all incidents to gain situational awareness before beginning fire suppression. This Watch Out shows a firefighter too far away to effectively describe the specific fire behavior, fuel types, and weather conditions on the fire.



2. In country not seen in daylight.

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Firefighting resources are often called to respond to fires at night in unfamiliar terrain. This Watch Out shows firefighters working at night in an area they are seeing for the first time which requires extra attention to surroundings and caution while working.

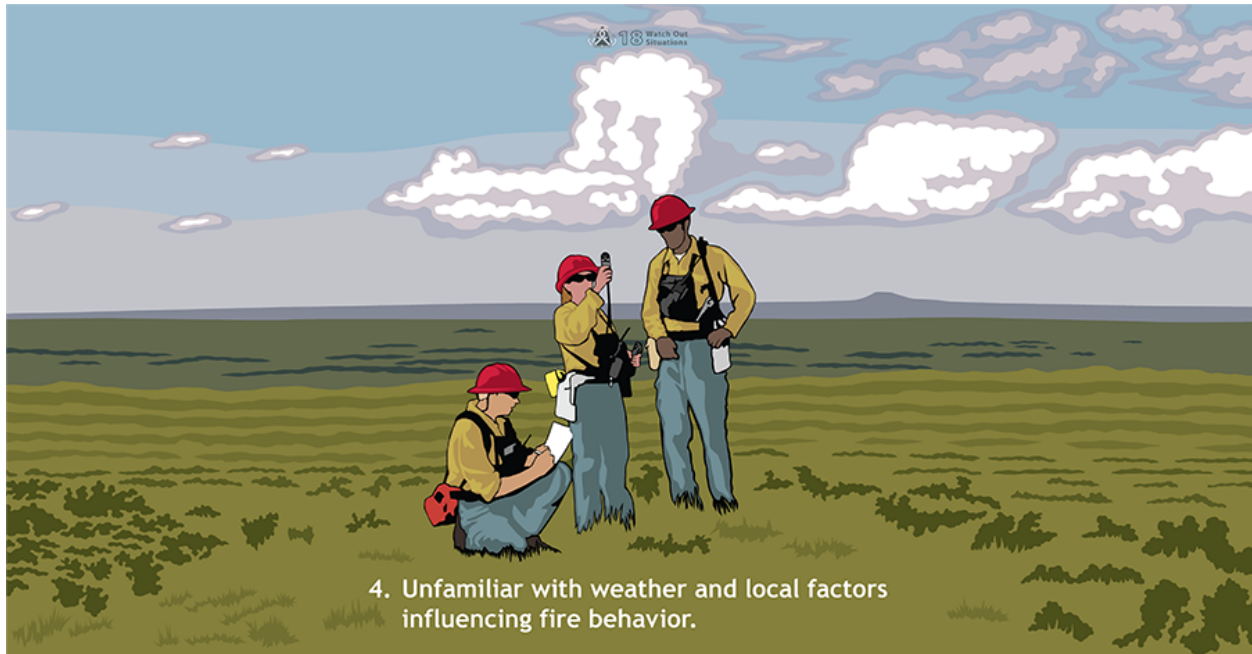


3. Safety zones and escape routes not identified.

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Lookouts, Communications, Escape Routes, and Safety Zones (LCES) are a critical approach all

wildland firefighters use to engage in fire suppression safely. This Watch Out depicts a crew without established escape routes or safety zones.



4. Unfamiliar with weather and local factors influencing fire behavior.

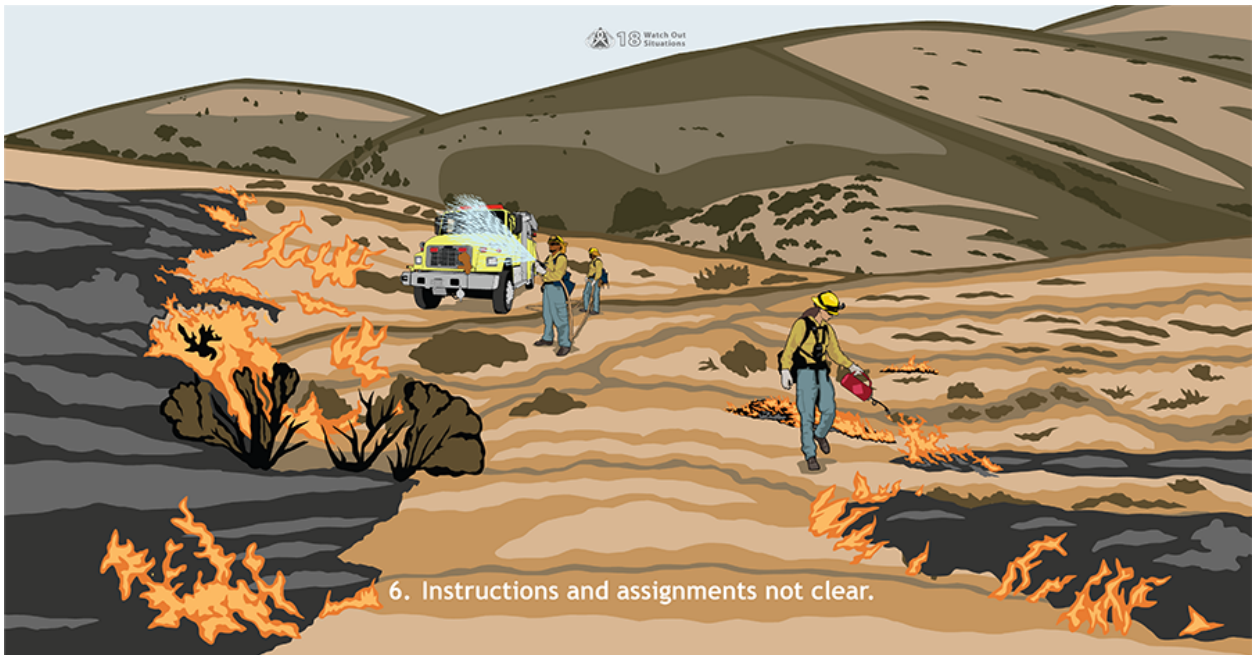
Weather forecasts play a crucial role in the planning and suppression of all wildland and prescribed fire operations and activities. This Watch Out depicts firefighters acquiring weather information but seemingly unaware of the incoming storm clouds which would directly impact fire behavior.



5. Uninformed on strategy, tactics, and hazards.

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Wildland firefighters rely on coordinated strategies and tactics to efficiently suppress fires and avoid hazards. This Watch Out demonstrates an airtanker dropping retardant away from the intended area, potentially indicating unclear communication.



6. Instructions and assignments not clear.

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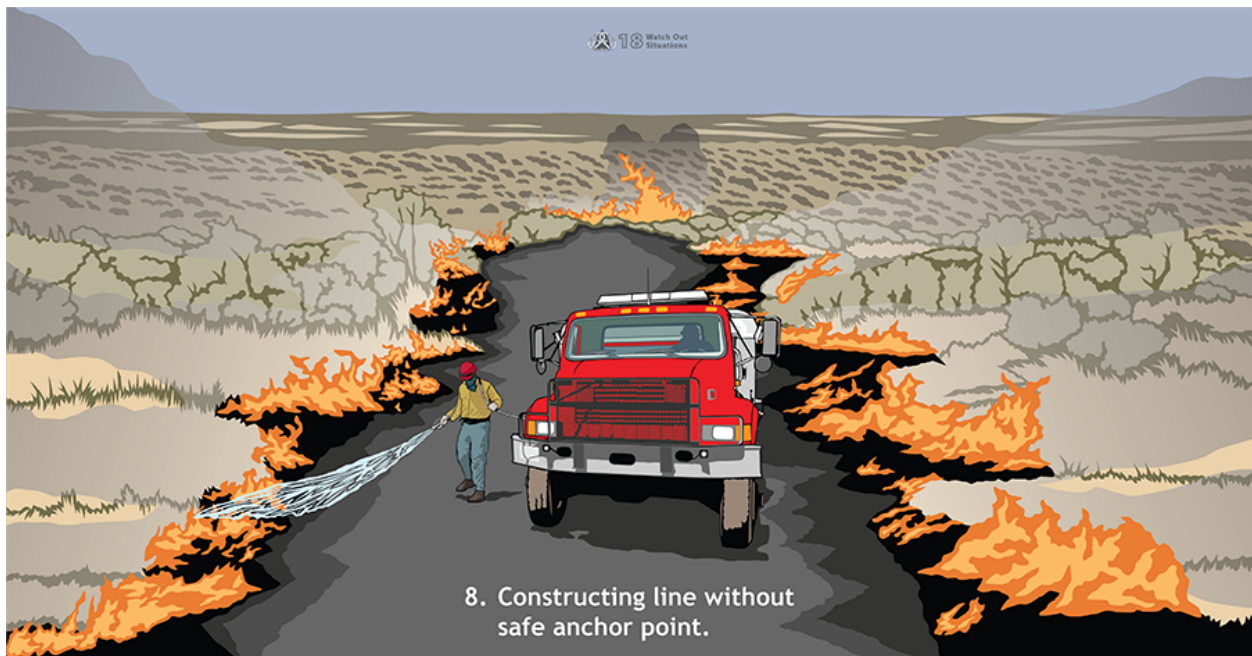
The Incident Command System (ICS) is used to provide uniform chain of command on all

incidents. This Watch Out shows an engine crew working in a counterproductive manner, without clear instructions towards an expected outcome.



7. No communication link with crewmembers or supervisor.

Known radio frequencies and channels enable instant communication within and between firefighting resources. This Watch Out shows a crew physically separated without any obvious method for communication among crew members or their supervisor.



8. Constructing line without safe anchor point.

An anchor point is an advantageous location, usually a barrier to fire spread, from which to start constructing a fireline. This Watch Out depicts an engine crew working along the fire edge without a clear anchor point.



9. Building fireline downhill with fire below.

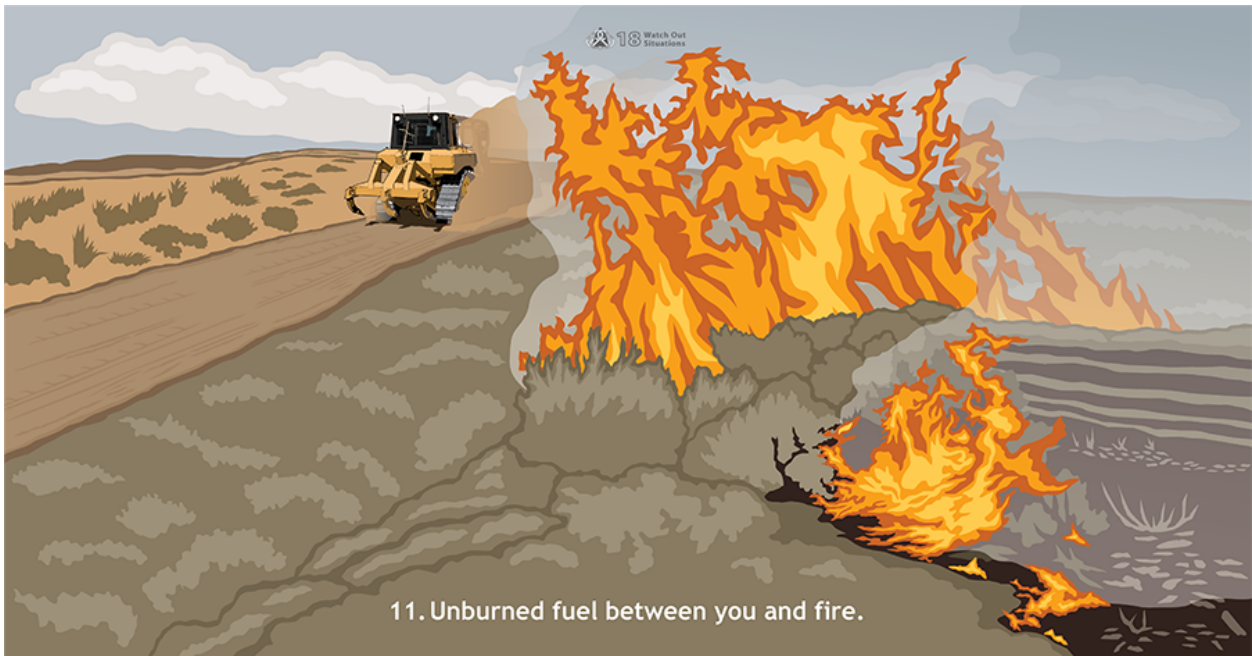
Building fireline downhill requires special attention to safety factors because of the potential for rapid uphill fire spread. This Watch Out depicts firefighters building fireline downhill without first mitigating the existing hazards.



10. Attempting frontal assault on fire.

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It is safer to start firefighting where the activity is lesser or the fire is moving away from firefighters. This Watch Out shows a firefighter in a position where he would be unable to safely engage in fire suppression.



11. Unburned fuel between you and fire.

11. Unburned fuel between you and fire.

Heavy equipment is often used to construct fireline to slow fire progression because it can build wider fireline at a faster rate. This Watch Out requires extra situational awareness because there is unburned fuel between the bulldozer and the main fire.



12. Cannot see main fire; not in contact with someone who can.

Lookouts, Communications, Escape Routes, and Safety Zones (LCES) are the foundation to safe fire suppression actions. This Watch Out depicts a crew member working away from his crew without a radio or other form of communication to be alerted to sudden changes in weather or fire behavior.



13. On a hillside where rolling material can ignite fuel below.

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Fires can move more quickly uphill. This Watch Out shows rolling logs and debris that are on fire and can ignite fuels below the crew building fireline.



14. Weather becoming hotter and drier.

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Hot temperatures and low relative humidity increase fire behavior. This Watch Out portrays a hot, dry afternoon with firefighters working to suppress a growing fire.



15. Wind increases and/or changes direction.

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Wind can significantly impact the rate and direction of fire spread. This Watch Out shows how it can also have an impact on aviation fire resources, such as helicopters.

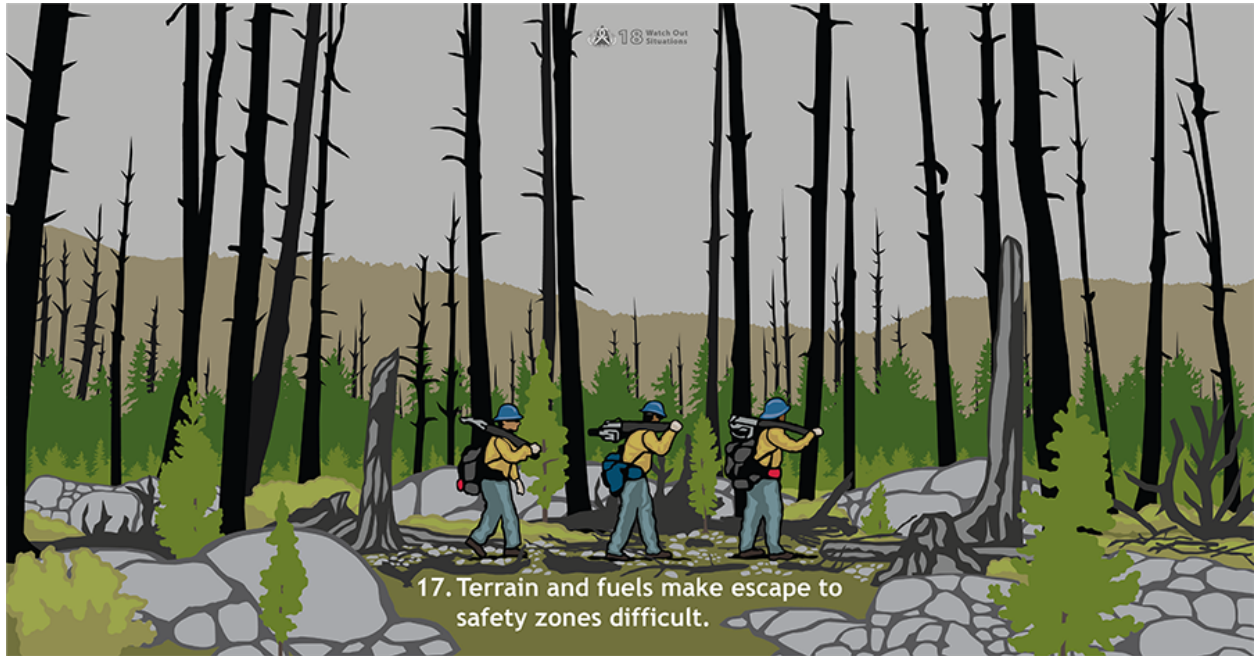


16. Getting frequent spot fires across line.

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Spot fires occur when embers land on the unburned side of a fireline. This Watch Out depicts an

engine crew attempting to contain several spot fires which are increasing in size while the main fire is also growing.



17. Terrain and fuels make escape to safety zones difficult.

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Rocks, dead and down trees, heavy fuels, and steep terrain can make escape to safety zones slow and difficult. This Watch Out shows firefighters already weighed down by heavy fire gear and tools trying to walk through uneven terrain and heavy fuels.



18. Taking a nap near fireline.

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Managing fatigue during wildland fire suppression is important for firefighter health and safety. This Watch Out depicts fire behavior increasing while firefighters take a nap without a lookout.

Common denominator of Fire behavior on Strategy Fires

These common denominators have been identified through studies of tragedy fires. It is important for firefighters to readily recognize them to prevent future tragedies.

Such fires often occur:

1. On relatively small fires or deceptively quiet areas of large fires.
2. In relatively light fuels, such as grass, herbs, and light brush.
3. When there is an unexpected shift in wind direction or in wind speed.
4. When fire responds to topographic conditions and runs uphill.
5. Critical burn period between 1400 and 1700.

Alignment of topography and wind during the critical burning period should be considered a trigger point to reevaluate tactics.

Blowup to burnover conditions generally occur in less than 60 minutes and can be as little as 5 minutes.

A tactical pause may be prudent around 1400 for reevaluating your situational awareness of topography, fuels, and weather.

It can be used as an opportunity to remember that this is the beginning of a dangerous part of the day for fighting fires and increased caution is in order.