2025

TREX Activity Workbook

PRESCRIBED FIRE TRAINING EXCHANGE
TREX
Learning Together, Burning Together

FLN
FIRE LEARNING NETWORK

THE Ember Alliance

WHAT IS TREX?

Prescribed Fire Training Exchanges (TREX) and similar cooperative burning provide experiential training that delivers workforce capacity-building in support of fire adapted communities and landscape restoration and resiliency. While operating under NWCG standards, TREXs use various models— from agency assists to neighbors helping neighbors— all while facilitating an all-hands, all-lands approach. TREXs emphasize integrated fire management, including skills beyond the fireline— from fire science and traditional ecological knowledge to community outreach.

WHAT IS THE TAW?

The intent of the TREX Activities Workbook (TAW) is to capture and categorize training activities, and then present it in a ‘plug and play’ format. TREX coaches may reference, expand their current training offerings to participants, or access a cache of rainy-day activities.

HOW DO I USE THE TAW?

Use the Activity Type Descriptions on pages 6 & 7 to find an activity that works for you based on time, resources, and available personnel.

The icons on page 5 provide a quick reference of Activity Type.

ACKNOWLEDGMENT

The TREX Activities Workbook (TAW) is supported by Promoting Ecosystem Resilience and Fire Adapted Communities Together, a cooperative agreement between The Nature Conservancy, USDA Forest Service and agencies of the Department of the Interior.

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Activity Type Quick Reference

ICE BREAKER/NAME GAMES

HANDS-ON ACTIVITY

STORYTELLING/ SENSE OF PLACE

SAND TABLE/THOUGHT EXERCISE

CREW COHESION

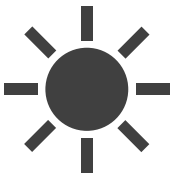
DRILL TO EDGE OF FAILURE

SKILL BUILDING

Other Relevant Symbols

ACTIVITY CAN BE DONE DURING INCLIMENT WEATHER

ACTIVITY CANNOT BE DONE DURING INCLIMENT WEATHER



Activity Type Descriptions

ICE BREAKER/NAME GAMES

Facilitate team building in a welcoming environment. Great first activity for a new group to get to know one another.

STORYTELLING/ SENSE OF PLACE

Allow group members to develop personal connections to one another or their surroundings; fosters a sense of attachment & togetherness.

CREW COHESION

Provide a safe space where members of a group can work together on a shared task; helps build bonds and create strong working relationships.

SKILL BUILDING

Improve or increase participants' skillsets related to a certain subject or activity (ex: chainsaw use or leadership skills) in a safe learning environment.

Activity Type Descriptions

HANDS-ON ACTIVITY

Activity that is designed to get participant's hands dirty and their minds engaged. Encourages teamwork and active involvement by participants. Great for participants that "learn by doing."

SAND TABLE/THOUGHT EXERCISE

Get participants thinking in new and innovative ways to solve problems or deal with hypothetical scenarios in a roleplay environment. Traditional "sand table" exercises may need additional equipment or an active imagination.

DRILL TO EDGE OF FAILURE

Prepare participants for true crises by pushing them to the very edge of their comfort zone, but in a supported environment. Developing successful mental 'slides' gives individuals the tools to respond instantaneously based on past experiences.

Table of Contents

*Note: "Total Time" includes both planning & implementation time.

Activity can be done during inclement weather

Activity cannot be done during inclement weather

	ACTIVITY TYPE	TOTAL TIME (MINS)		ACTIVITY NAME	PAGE NUMBER
	Skill Building	Any		Media and Communications	32-33
	Skill Building	30-180		Media Ready Communications	34-35
	Skill Building	30-60		Gridding	36-37
	Skill Building	90-120		FEMO Utility	38-39
	Skill Building	60-90		Open Face & Directional Felling	40
	Skill Building	>120		Avenza PDF Training	41-42
	Skill Building	30-60		Chainsaw Assembly	43-44
	Skill Building	30-60		Pump & Hoselay	45-46
	Hands-On Activity	90-120		Apple Pump & Roll	47-48
	Hands-On Activity	90-120		Group Situational Awareness Exercise	49-51
	Hands-On Activity	90-120		Chainsaw Parts & Maintenance	52-53

	ACTIVITY TYPE	TOTAL TIME (MINS)		ACTIVITY NAME	PAGE NUMBER
	Hands-On Activity	60-90		3-Way Medical Training Scenario	54-55
	Hands-On Activity	60-90		Burn Planning Scenario with Briefing	56-59
	Hands-On Activity	0-30		6-Minutes for Safety Skills	60-61
	Hands-On Activity	60-90		Medical Training Scenario	62-64
	Sand Table/ Thought Exercise	30-60		Field Leadership Activity Situations	65-66
	Sand Table/ Thought Exercise	0-30		AAR Briefing & Philosophy	67-68
	Sand Table/ Thought Exercise	0-30		14 Leadership Traits	69-70
	Sand Table/ Thought Exercise	30-60		Active Bystander Scenarios	71-72
	Sand Table/ Thought Exercise	Any		Indigenous Fire Management	73-74
	Sand Table/ Thought Exercise	90-120		Individual Personality Exercise	75-76
	Sand Table/ Thought Exercise	90-120		Shelter Deployment Lessons Learned	77-78

Appendix Table of Contents

Example Activity

Contributor: First & Last Name, Contributor Contact Info in Appendix A on pg. 86

Activity Type:	**Total Time Expected:**	**Implementation Time:**
In this Example, we have a Hands-On Activity that can be done in inclement weather (see symbol reference on pg. 4)	Includes preparation, briefing, implementation, debrief, breakdown/rehab (mins)	Time that Plans Section/ Instructors would need to allot in the schedule for participants to complete the activity (mins)

Activity Involves: A list of categories where your activity could increase a fire practitioner's knowledge. Ex: Weather/FEMO, Line Construction, Medical Response, Cultural Resources, Personal Preparedness, Extended Attack, Fire Ecology, etc.

Intent

Purpose of the activity, which should be shared with participants when appropriate.

Learning Outcomes

What participants walk away with, which should be shared with participants when appropriate.

Materials Required

Required equipment/materials and a preferred location, if any (e.g., classroom, parking lot, field, etc.).

Ideal Instructor to Student Ratio and Instructor Qualifications

Number of instructors per number of students, and relevant NWCG qualifications (or similar experience) instructors should have.

Example Activity

Contributor: First & Last Name

Description of Activity

Relevant details and information to implement activity

Briefing for Other Instructors

Major briefing points critical to success of activity implementation

Major Briefing Points

Major briefing points critical to the success of participants

Rules for the Activity

Rules to provide structure for participants

Maps, Images, and other Relevant Information

Important visuals, supporting documents, prompts, or activity materials. If the training document(s) is/are multiple pages long, it will be placed in the Appendix at the end of this document.

Breaking the Ice

Contributor: Rodolfo Zuniga Villegas

Activity Type:	Total Time Expected:	Implementation Time:
Ice Breaker/Name Games	0-30 mins	0-30 mins

Activity Involves: Crew Cohesion, Communication

Intent

Equalizing crews, getting to know your co-workers

Learning Outcomes

Building Trust

Materials Required

Two or more participants

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 6 students

Description of Activity

Pair participants together to discuss their background experience, plus a particular event/anecdote. Afterward, they should start talking and getting to know each other. The participants will eventually introduce each other to the rest of the team. This activity is an icebreaker meant to build trust, learn about each other, and tell relevant anecdotes about the person being introduced.

Briefing for Other Instructors

Make sure each participant shares their background experience plus a particular event/anecdote

Breaking the Ice

Contributor: Rodolfo Zuniga Villegas

Major Briefing Points

Once a pair of participants learn about each other, then they will introduce each other to the rest of the team.

Rules for the Activity

Once paired up, ask participants to turn around and give each other a hug or a high-five and repeat/state "I am a fire practitioner."

Maps, Images, and other Relevant Information

None for this activity

Words on Fire

Contributor: Kate Williams

Activity Type:	Total Time Expected:	Implementation Time:
Storytelling/Sense of Place	30-60 mins	0-30 mins

Activity Involves: Briefings, Leadership Skills, Soft Skills (e.g., conflict management)

Intent

Review how our language influences our intent and actions

Learning Outcomes

Creating awareness in participants about their use of language and jargon

Materials Required

No materials required; location can be anywhere the team can circle up

Ideal Instructor to Student Ratio and Instructor Qualifications

One person can lead this discussion for the whole group

Description of Activity

Instructor/discussion leader opens with quote from Stephen Pyne on how "words on fire" can have consequences when it comes to fire management. Briefly review the history of fire suppression in the US and discuss the differences in understanding of common words and/or phrases. Also discuss common fire narratives and opinions on what is missing. End the discussion by going around the circle and asking everyone how they relate to fire (examples included in attached PDF) and how best to refer to the whole group. Discussions can differ based on the interests of the discussion leader and the TREX event but should revolve around the thought that fire management goes beyond just firefighters and "fire professionals".

Words on Fire

Contributor: Kate Williams

Briefing for Other Instructors

Think about the purpose of TREX and how utilizing common terms (ex: firefighters, initial attack, the very long list of acronyms that suppression folks are exclusively familiar with) can isolate non-primary fire/non-agency individuals. When aware of this, it can have a direct effect on understanding and create effective communication.

Major Briefing Points

This exercise is meant to open a conversation about language habits, though it can open this up further beyond just common fire terminology.

Rules for the Activity

Respect that people are attending TREX for reasons that may be different from your own and that they may identify with different values than you. End the discussion asking folks how they identify in relation to fire (firefighter, fire practitioner, biologist, community member, student, land manager, etc.) and define a communal term for the group (practitioners, burners, etc.).

Maps, Images, and other Relevant Information

Words on Fire Exercise document in Appendix B on pgs. 86-87

Crew Cohesion/Personality Traits

Contributor: Jane Park

Activity Type:	Total Time Expected:	Implementation time:
Crew Cohesion	60-90 mins	30-60 mins

Activity Involves: Soft Skills (e.g., conflict management), Crew Cohesion, Communication

Intent

To learn how different personalities interact with one another on the fireline, as well as contribution to crew cohesion, trust, and safety.

Learning Outcomes

To understand how personnel can work effectively with a wide range of people while developing understanding and empathy with their crew mates.

Materials Required

PowerPoint presentation, computer, screen, personality test sheets, flip chart paper/markers

Ideal Instructor to Student Ratio and Instructor Qualifications

Flexible; single instructor can facilitate several groups at once

Description of Activity

Review the lessons learned document regarding crew cohesion and the examples of inter/intra crew cohesion from Mann Gulch and South Canyon. Talk about experiences with different types of crew members and leaders.

Then have crew do a personality test (DISC or any with four main types). Prior to exercise, draw up operational fireline issues, where crews must implement solutions to pre-determined scenarios. (i.e., prioritizing mop-up, dealing with a despondent crew member, dealing with conflict, dealing with an emergency) Participants should be paired with others of the same personality type and try solving the problem.

Crew Cohesion/Personality Traits

Contributor: Jane Park

Description of Activity (continued)

Give participants 15 mins to discuss and create a solution. Ask for a representative to present answers, their method of deduction, and any conflicts, etc. Create a new scenario, attempting to pair students into different personality groups. Debrief in the same way. Notice how each personality group will expose their traits. Next scenario, have the crews in configuration at home base. Finish exercise with discussion about various personality traits requiring different methods of communication, leadership, and problem-solving styles. Stress that learning about each other contributes to better communication, trust, cohesion, and safety on the fireline.

Briefing for Other Instructors

Ensure instructor understands objectives and various personality groups and how they may relate to operational scenarios

Major Briefing Points

Be open and honest about your traits even if you think some of them are negative

Rules for the Activity

Be respectful. Engage in open & honest communication. The goal is to learn and accept our differences and learn about our strengths and weaknesses.

Maps, Images, and other Relevant Information

None for this activity

4 X 4 Board Walk

Contributor: Phillip Dye

Activity Type:	Total Time Expected:	Implementation Time:
Hands-On Scenario	30-60 mins	0-30 mins

Activity Involves: Communications, Briefings, Leadership Skills

Intent

Provide briefing, communicate leader's intent, problem solve in a time-compressed situation.

Learning Outcomes

Building Trust

Materials Required

Two – 4”x4”x12’ boards with rope handles attached, and three cones

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 4 students

Description of Activity

See “Major Briefing Points” section on the next page.

Briefing for Other Instructors

- Stop activity if you observe unsafe actions
- Follow time limits
- Ensure contact is always made with 4x4s

4 X 4 Board Walk

Contributor: Phillip Dye

Major Briefing Points

Wildland firefighting requires teams to work together to accomplish a goal or objective. To simulate this, you and your team must successfully navigate this course. Standing and walking on the 4x4s provided, your team must slalom through the cones without touching them. You must go around the last cone and then slalom back to the starting line.
Both feet must always remain on separate 4x4s and if a team member steps/falls off a 4x4, your team must remain in place, silently, for 15 seconds. Also, if a cone is touched, a similar 15-second penalty will be assessed. After the penalty, you may resume movement and talking. At the completion of this exercise, your team will conduct an After-Action Review (AAR). For AAR reference, see page xiii of the Incident Response Pocket Guide (IRPG).

You have 15 minutes to complete this exercise. The AAR is not timed but should take no longer than 10-15 minutes.

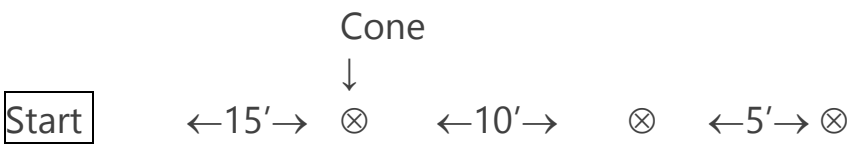
- You will now have one minute to review this exercise and to ask questions (Set 1-minute timer)
- You now have two minutes to brief your team (Set 2-minute timer)
- Your 15-minute clock will now begin

Rules for the Activity

- Stop activity if you observe unsafe actions
- Follow time limits
- Ensure contact is always made with 4x4s

Maps, Images, and other Relevant Information

Place cones and bucket like this:



Blindfold Maze

Contributor: Phillip Dye

Activity Type:	Total Time Expected:	Implementation Time:
Hands-On Scenario	30-60 mins	0-30 mins

Activity Involves: Communications, Briefings, Leadership Skills

Intent

Provide briefing, communicate leader's intent, problem solve in a time-compressed situation.

Learning Outcomes

Building Trust

Materials Required

200’ of rope or flagging, objects to tie-off rope/flagging (trees will do, but watch for low-hanging branches), blindfolds (something to cover participants eyes)

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 4 students

Description of Activity

Teams will use only verbal instructions to navigate blindfolded participants through the course

Briefing for Other Instructors

- Blindfold members away from maze and carefully walk them to it so they cannot see the maze beforehand
- Place team members evenly around the maze
- Ensure team members are safe from tripping and overhead hazards
- Shuffling of feet is encouraged

Blindfold Maze

Contributor: Phillip Dye

Briefing for Other Instructors (cont.)

- Once a team member explicitly asks for help ("I need some help" or similar phrase) quietly remove their blindfold, and loudly announce "I will show you the way out". Escort that team member to "the exit" and allow them to use verbal cues to help other team members.

Major Briefing Points

Read to team leader: "Sometimes in wildland firefighting we have only verbal instructions to guide us. In this scenario, your team has been temporarily blinded by heavy smoke and must rely on verbal cues to be guided to safety. You must guide your team out of a maze using only voice commands as you will all be blindfolded. You may ask for help if needed." "You have 15 minutes to complete this exercise. You now have one minute to ask questions." "You now have two minutes to brief your team. Afterwards, I will blindfold all of you and walk you to the maze. Time will begin when I tell you that all team members are in place. Again, you may ask for help if needed."

"At the completion of this exercise, your team will conduct an AAR."

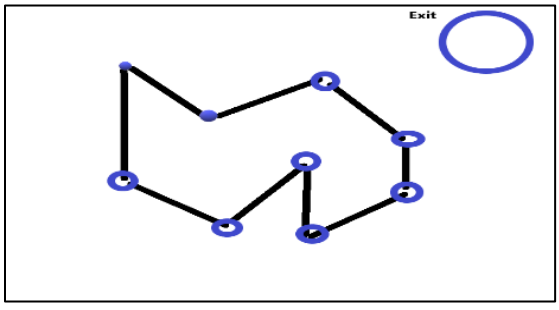
Rules for the Activity

- Stop activity if you observe unsafe actions
- Follow time limits

Maps, Images, and other Relevant Information

This video explains the station well:
https://www.youtube.com/watch?v=oPeDplEUv3o

One possible setup:



Toxic Waste

Contributor: Phillip Dye

Activity Type:	Total Time Expected:	Implementation Time:
Crew Cohesion	30-60 mins	0-30 mins

Activity Involves: Communications, Planning

Intent

Lift & carry "toxic waste" in order to dispose of it safely as a team

Learning Outcomes

Teamwork and physical activity

Materials Required

- Two #10 cans
- Two hula hoops
- Three 26" bicycle tubes
- 6 – 10' sections of rope
- 5-gallon container of water

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 4 students.

Description of Activity

Lift and carry liquid from one can to the other without spilling or breaking zone of exclusion

Briefing for Other Instructors

- Ensure team members do not enter the zone of exclusion
- Use 5-gallon container to re-fill cans if they spill

Toxic Waste

Contributor: Phillip Dye

Major Briefing Points

Your team has been assigned to dispose of a hazardous liquid. You must dispose of the hazardous liquid by pouring it into an empty container. This will require you to lift the can that is filled with water, transport it, and pour the contents into the other can. You must not spill any of the liquid or you will need to start over.

You may only use the materials provided, and may not cut the ropes or bicycle tubes.

You are not allowed to reach inside either hula hoop. This includes above the hula hoop. Think of a cylinder of exclusion extending all the way to the sky with the hula hoop as its boundary. If one enters exclusion zone, they will suffer a 30 second penalty in which they may not move or talk. After the penalty, they may resume moving and talking. At the completion of this exercise, your team will conduct an AAR.

You have 15 minutes to complete this exercise. The AAR is not timed but should take no longer than 10 – 15 minutes.

You will now have one minute to review this exercise and to ask questions.

(Begin timer– 1 min)

You now have two minutes to brief your team

(Begin timer – 2 minutes)

Your 15-minute clock will now begin

Rules for the Activity

Do not spill the liquid, enter the zone of exclusion, cut the ropes, or cut the bicycle tubes.

Maps, Images, and other Relevant Information

Set-up course like this:

⊗ ← 30′ → ⊗ ← can inside hula hoop

Helium Stick and Roll

Contributor: Phillip Dye

Activity Type:	Total Time Expected:	Implementation Time:
Crew Cohesion	30-60 mins	0-30 mins

Activity Involves: Communications, Soft Skills (e.g. conflict management)

Intent

Work cooperatively to achieve a common goal

Learning Outcomes

Teamwork & crew cohesion

Materials Required

- One 10’ – 15’ wooden dowel or tent pole (anything relatively lightweight)
- One roll of duct tape

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 4 students

Description of Activity

Team members must lower the pole completely to ground without losing touch with pole. Team members must then repeat the same task with a roll of duct tape.

Briefing for Other Instructors

- Stop activity if you observe unsafe actions
- Follow time limits
- Ensure no one loses contact with the object at any time

Helium Stick and Roll

Contributor: Phillip Dye

Major Briefing Points

This exercise is designed to allow your team to work cooperatively to achieve a common goal. In this exercise, you must lower the pole to the ground without any team member losing contact with the pole. If someone loses contact, you must start over.

Each member may make only one finger contact with the object. That finger must always stay in contact with the object. No one is permitted to grasp the object at any time. At the completion of this exercise, your team will conduct an AAR.

You have 15 minutes to complete this exercise. The AAR is not timed but should take no longer than 10 – 15 minutes.

You will now have one minute to review this exercise and to ask questions

Begin timer– 1 min

You now have two minutes to brief your team

Begin timer – 2 minutes

Your 15-minute clock will now begin

Rules for the Activity

None for this activity

Maps, Images, and other Relevant Information

None for this activity

Module Contract

Contributor: Jennifer Mueller

Activity Type:	Total Time Expected:	Implementation Time:
Crew Cohesion	30-60 mins	30-60 mins

Activity Involves: Communications, Leadership Skills, Soft Skills (e.g. conflict management)

Intent

Collectively create a set of behavioral expectations that the entire module agrees to abide by and can reference, to hold each other accountable.

Learning Outcomes

Expectations for all module members and a shared sense of responsibility/accountability to uphold those expectations.

Materials Required

Markers and ideally a poster-size sheet of paper or whiteboard

Ideal Instructor to Student Ratio and Instructor Qualifications

Module Lead + all Mod members

Description of Activity

Explain the intent of the crew contract. Offer a few of your expectations for the group and write them on the whiteboard (e.g.):

- Communication
- Be respectful of everyone
- Embrace vulnerability

Briefing for Other Instructors

The contract is everyone's responsibility, and we will agree to it as a group. Together, we will use the contract to hold each other accountable during the TREX.

Module Contract

Contributor: Jennifer Mueller

Major Briefing Points

This activity should be facilitated by the Module/Crew Leader but relies on individuals to participate to construct the contract.

Often it takes time to get buy-in on this idea from the group. Try leveraging those already in leadership positions to get their buy in before the activity. Their participation early on can help draw hesitant folks into the mix.

When complete, post the contract on the wall or email a copy to the group so everyone can see it.

Rules for the Activity

Respect all contributions to the process and openly discuss areas where folks don't see eye to eye.

Maps, Images, and other Relevant Information

None for this activity

Impromptu Leadership

Contributor: Ben Wheeler

Activity Type:	Total Time Expected:	Implementation Time:
Crew Cohesion	0-30 mins	0-30 mins

Activity Involves: Leadership Skills

Intent

Allow participants to develop leadership skills by sharing their knowledge/experience in impromptu, informal settings by leading a small group in a specific topic. These activities can be used to build crew cohesion and keep participants engaged for short periods during down time/inclement weather.

Learning Outcomes

Encourage people who are not normally in a leadership position to explore their leadership potential in short bursts. If participants are normally in a leadership position, participation gives additional credibility among subordinates.

Materials Required

None required; can be done anywhere

Ideal Instructor to Student Ratio and Instructor Qualifications

Ideal group size depends on the content and context, but we recommend no more than 1 instructor/leader to 10 students. No specific qualifications required.

Description of Activity

Talk to the crew/module to see if anyone is interested in volunteering to lead a short section on a topic of their choosing. The topic should be something they are interested in, but they do not need to be an expert – the team is relied on to fill in knowledge gaps. Examples include:

- How to take weather
- Hand tool rehab
- What do you carry in your line gear?

Impromptu Leadership

Contributor: Ben Wheeler

Description of Activity (cont.)

Additional Examples:

- How to hand jam/program a radio in the field
- Debrief a medical scenario someone was involved in
- Troubleshooting equipment

Briefing for Other Instructors

1. Get out of your comfort zone, you are in a safe space to learn
2. Pick something you are passionate about, even if you are not an expert
3. Choose 3-4 main points you want others to take away
4. Explain what you know and ask open-ended questions to facilitate group discussion (e.g., why is this important?)
5. It doesn't need to be perfect!

Major Briefing Points

1. Support your crewmember as they practice their leadership skills and share their knowledge
2. Wait to chime in with your knowledge until asked

Rules for the Activity

Create a safe and respectful space for learning

Maps, Images, and other Relevant Information

None for this activity

Media and Communications

Contributor: Jennifer Fawcett

Activity Type:	Total Time Expected:	Implementation time:
Skill Building	Any Amount of Time	Any Amount of Time

Activity Involves: Personal Preparedness, Communications, Soft Skills Conflict Management

Intent

To allow participants to practice with interviews, coming up with answers on the spot, being in front of a camera, talking to the public, etc.

Learning Outcomes

Feeling more comfortable being in front of a camera, answering interview questions or speaking with the public

Materials Required

Cell phone or other camera; document with template interview questions

Ideal Instructor to Student Ratio and Instructor Qualifications

1:1 or 2:1 student: Student; if a PIO is available, they can move from group to group

Description of Activity

One person is acting as the media/public while videoing, and the other is answering the questions. If there a 3 people in the group, then the third person can video. Rotate through so that each person has a chance to answer the questions in front of a camera. The videos are then sent to ONLY the participant answering the questions so that person can see themselves in front of a camera. For those people that feel comfortable in sharing their videos, a few can be selected to share in front of the entire TREX audience to discuss their interview.

Media and Communications

Contributor: Jennifer Fawcett

Briefing for Other Instructors

Develop a scenario in which participants will need to speak to the media or the public when no PIO is available. Instructor may develop template questions for each group, or everyone can have the same questions. Each group should have at least one phone/video camera among them. Provide participants with the scenario and key points for a successful interview. Talking points about prescribed fire or the TREX itself is acceptable.

Major Briefing Points

Each group should have at least one phone/video camera among them. Each person should understand the scenario before they begin.

Rules for the Activity

See Activity Description for rules

Maps, Images, and other Relevant Information

None for this activity

Media Ready Communications

Contributor: Jenifer Bunty

Activity Type:	Total Time Expected:	Implementation time:
Skill Building	Total time is about 3 hours but can be broken into shorter (30 min) standalone segments.	Total time is about 2.5 hours but can be broken into shorter (30 min) segments.

Activity Involves: Communications, Briefings, Leadership/Soft Skills, Conflict Management

Intent

To prepare all firefighters with basic media and communications training

Learning Outcomes

Participants should walk away with a feeling of being essentially "media ready", the way they are "fire ready". They should possess the ability to use storytelling and key messages to address their audience confidently, whether in person or on camera. Participants should use their knowledge of preferred terminology and communications techniques. They should also think through cultural, social, and other considerations for when they discuss their work with others.

Materials Required

Videos of firefighter/IC interviews, cameras or cell phones that can record short videos

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor per 20 students

Instructor should be well versed in communications strategies and media training (PIO)

Media Ready Communications

Contributor: Jenifer Bunty

Description of Activity

This is a media/communications training designed for a 2–4-hour block of time. It can be used as part of initial trainings, briefings, or during inclement weather. General outline and handouts are attached. It may be helpful to have more than 1 instructor depending on your group size, but it isn't necessary. This activity is great for crew cohesion and ice breaking as well. For Exercise 3 on identifying key messages, it's recommended splitting the example audiences (listed on 2nd page) so that each group only does 1 or 2, and then shares the examples and discusses as a larger group.

Briefing for Other Instructors

The timeline of the activity helps each point build on itself. A lot of this will be encouraging participants to be themselves and helping them feel comfortable in front of a camera or with media interviews.

Major Briefing Points

Discuss local population's views of fire (or prescribed fire). Include as much cultural/social info about potential audiences as you can. Encourage participants to think about their audience first and to communicate for their listener.

Rules for the Activity

Participate

Maps, Images, and other Relevant Information

See Appendices C & D (pgs. 88-91) for relevant training documents.

Appendix C: Media Training Handout (pgs. 88-89)

Appendix D: Media Training Presenter Outline (pgs. 90-91)

Gridding

Contributor: Greg Philipp

Activity Type:	Total Time Expected:	Implementation time:
Skill Building	30-60 mins	0-30 mins

Activity Involves: Communications, Briefings, Line Bossing, Leadership Skills, Soft Skills (e.g. conflict management)

Intent

Provide opportunity to practice different leadership styles, brief, organize, problem-solve, troubleshoot, implement, monitor, adapt, regroup, lead, follow, and effectively grid an area.

Learning Outcomes

The importance of listening and following all instructions. The experience of being given a task and accomplishing it with the human factors that come along with it. How to lead from below if tactic isn't working, and how to communicate with tact. Working out challenges from the ranks and recognizing that time limitation may increase the stress of situation.

Materials Required

Any big outdoor area, flagging tape, and some small items to hide in grass or woods

Ideal Instructor to Student Ratio and Instructor Qualifications

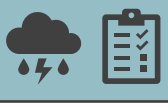
3 instructors per 20 students

Description of Activity

Gridding for hot spots, challenging new leaders and creating more experienced followers. This is an activity in communication as well.

Gridding

Contributor: Greg Philipp



Briefing for Other Instructors

Get to know your participants before assigning roles. Instructors need to pay attention to the dynamics of the group and yell "freeze!" in teaching moments, but also allow participants a chance to figure out lessons on their own. Let participants develop effective strategies and tactics and allow them to make corrections when necessary.

Major Briefing Points

Task: To find five items which represent smoldering spots

Purpose: To save all the work that went in to building line, burning, and holding it

End state: All the spots are located

Rules for the Activity

Clearly define area to be searched. Make it harder or easier based on the experience levels of participants. Try to include odd-shaped areas, uphill climbs, small items, time constraints, tough environmental conditions, etc. The human dimensions that come out are different every time, so changing roles is up to instructor.

"I had a really negative crew member undermine the grid and leader, I put her in charge, and what an eye-opening experience for her."

Maps, Images, and other Relevant Information

None for this activity

FEMO Utility

Contributor: Kate Williams

Activity Type:	Total Time Expected:	Implementation time:
Skill Building	90-120 mins	60-90 mins

Activity Involves: Weather/FEMO, Fire Behavior, Fire Ecology

Intent

Explain NWCG Fire Effects Monitor (FEMO) capabilities to be better utilized by RXB2's/FIRB/Holding and how to write better/specific monitoring objectives into burn plans.

Learning Outcomes

"So that's what FEMOs can do and what goes into a FEMO report!"

Reviews basic forestry measurements (individual's pace, tree height, fuel load sampling)

Materials Required

Phone/camera; photo load frame + reference photos or tape for Brown's transect; FIREMON book for referencing soil burn severity coding (optional); can ask folks to download Dioptra (Android) or Theodolite (Apple) while in cell service or have tablet for sharing; observation data sheets

Ideal Instructor to Student Ratio and Instructor Qualifications

1 Instructor per every 4 students for hands-on sampling

Description of Activity

Have FEMOs briefly explain how they use a burn plan using resource objectives & prescription parameters to inform what/how they monitor. Using an example burn plan, have FEMOs/FEMO(t) go over monitoring conducted pre/during/post-fire and what their final FEMO summary might look like to compliment a typical plan. The FEMOs can walk the group through the observations they make (fuel loading & coverage, burn severity, scorch & char heights which can also teach newer firefighters how to estimate tree height, smoke observations, fire behavior, installing photo points).

FEMO Utility

Contributor: Kate Williams

Description of Activity (continued)

Have FEMOs make a very basic plot protocol relevant to that landscape and ask small groups to collect information at each "plot". Ask the group how and what people monitor at their home units & how that information is used.

Tie the lesson together into how burn bosses & SRB can utilize FEMOs during the burn to answer questions like: are we going to be able to finish the unit based on current spread/firing timing? Are we getting the desired fuel consumption listed in the plan? Where is our smoke going? How are the various fuels reacting to lighting tactics? Did we meet our objectives?

Briefing for Other Instructors

Specifically highlight how FEMOs can be used other than taking Weather Observations

Major Briefing Points

Share how monitoring is typically conducted at your home unit; how does monitoring differ between different ecosystems and different burn objectives?

Rules for the Activity

Get people taking measurements and using equipment (clinometers on their compass, a hypsometer/laser if one is handy, photo-load frames or Browns transects, have individuals measure their pace); contrast and compare different techniques and why one size doesn't fit all (example: how do prairie system managers measure their fuel loading? Where do folks get their fuel moisture #'s from? What do you sample if you have 1 day ahead of the burn vs. 1 hour?).

Maps, Images, and other Relevant Information

None for this activity

Open Face Felling & Directional Felling

Contributor: David Futa

Activity Type:	Total Time Expected:	Implementation time:
Skill Building	60-90 mins	More than 120 mins

Activity Involves: Chainsaws, Equipment Maintenance/Troubleshooting

Intent

Safe, controlled dropping of trees and hazards

Learning Outcomes

Correct, directional safe felling of hazard trees

Materials Required

Chainsaw, chainsaw equipment (tools, fuel, etc.), and all appropriate chainsaw PPE

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor to 8-10 students

Description of Activity

Chainsaw safety

Briefing for Other Instructor

Participate in the "Game of Logging" training program

Major Briefing Points

Bring your saws and safety gear

Rules for the Activity

Pay attention, ask questions, follow rules set out by the instructor

Maps, Images, and other Relevant Information

None for this activity

Avenza PDF Training

Contributor: Katie Sauerbrey

Activity Type:	Total Time Expected:	Implementation Time:
Skill Building	More than 120 mins	90-120 mins

Activity Involves: Communications, Planning, Technology

Intent

The purpose of the activity is to teach TREX participants how to utilize Avenza to navigate, collect data, and transfer data to a main database for future use. This will allow participants to collect data on burn units throughout the event and upload the data to the IMT for planning/map making purposes.

Learning Outcomes

Utilize Avenza to navigate around an area (a burn unit if possible), collect data (points, photos, and tracks), and transfer data back to the TREX IMT for future use

Materials Required

- Devices within the module with Avenza pdf (or similar program depending on the preference of the Incident Management Team
  All participants should use the same software platform) which can be shared within the module in the event not all participants have access to a handheld device with the software
- Base map for data collection available to all participants available through map store or QR code (This map could be of a burn unit, or the facilities where the TREX event is being hosted)
- Print out of directions for using Avenza for students to reference while in the field
  Example is here: https://ucanr.edu/sites/forestry/files/321982.pdf
- Email address for students to send their collected data once the activity is complete
- Avenza How-To Presentation for students prior to exercise
  Examples here: https://www.avenzamaps.com/help/tutorials/
- WIFI connectivity for folks to down the app and maps

Avenza PDF Training

Contributor: Katie Sauerbrey

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor to every (+/-) 5 students

Description of Activity

Participants will be given an instructional presentation on how to use Avenza and utilize attained knowledge for field exercise. Practice and demonstrate competency.

Briefing for Other Instructors

1. Provide a training session via presentation for participants about Avenza, how it is utilized, and how to use it
2. Work with participants to download the app within their modules- pair folks who have used the software with those who haven't
3. Provide a base map QR code for participants to download for data collection
4. Ask participants to collect X number of points, X number of track logs, X number of photos while navigating with Avenza- (give them an appropriate amount of time to do so based on the site)
5. When participants return, talk them through exporting data back to IMT

Major Briefing Points

1. Presentation on how to use Avenza
2. Instructions on what data you would like them to collect
   Printed instructions are ideal and this activity can be framed as a scavenger hunt- (IE. Tag X number of holding concerns)
3. Safety and communications briefing while amidst activity
4. Instructions for data upload to IMT upon return

Rules for the Activity

Safety is the priority when in the field

Maps, Images, and other Relevant Information

None for this activity

Chainsaw Assembly

Contributor: Phillip Dye

Activity Type:	Total Time Expected:	Implementation Time:
Skill Building	30-60 mins	0-30 mins

Activity Involves: Chainsaws, Equipment Maintenance/Troubleshooting, Communications

Intent

Each team must safely assemble chainsaws and cut two short rounds off each end of log. Although this event involves friendly competition, **it is not a race.**

Learning Outcomes

Teamwork, chainsaw assembly & operation skills

Materials Required

- Tarp, about 8' x 10'
- Chain saws, disassembled (remove bar and chain from power unit); it is best if saws are different sizes and/or models
- 2 scrench tools
- 2 pairs saw chaps
- Saw fuel and bar oil
- Log for cutting; set-up safely above ground
- Extra chain saw parts and tools
- Back-up chainsaw, if available
- Eye and ear protection (in case sawyer lacks them)

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 4 students

Description of Activity

Teams of 2-4 participants will safely assemble a chainsaw, operate it to cut off two rounds from a log (any size appropriate for equipment & participant experience level), and then disassemble the chainsaws back to the original position they were found in at the start of the exercise. The activity will be timed, but safety is priority.

Remember: this is not a race, and teams deemed to be operating unsafely will be disqualified.

Chainsaw Assembly

Contributor: Phillip Dye

Briefing for Other Instructors

- Stop activity if you observe unsafe actions
- Be particularly mindful of safe saw operation
- Position yourself to be able to signal sawyer to stop
- Follow time limits

Major Briefing Points

Your team has been assigned to perform chain saw work. Participants must assemble the chain saws provided and cut two short rounds off each end of the log. Each cut must be made by a different chain saw. Sawyers must wear *all* proper PPE and ensure operations are conducted safely. You will be stopped if there are ANY unsafe actions.

After completing both cuts, the team must disassemble their chainsaw to the way they were found. Upon completion of exercise, each team will conduct an AAR.

15 minutes to complete this exercise. The AAR is not timed but should take no longer than 10 – 15 minutes. See AAR page of the Incident Response Pocket Guide (IRPG) on pg. xiii for AAR guidance. Teams will have one minute to review exercise and ask questions.

Begin timer– 1 min

Two minutes to brief your team

Begin timer – 2 minutes

15-minute clock will now begin.

Rules for the Activity

Wear appropriate PPE & follow general chainsaw safety guidelines throughout the exercise. Teams that are found to be operating unsafely will be disqualified. Follow time limits & have fun.

Maps, Images, and other Relevant Information

None for this activity

Pump & Hoselay

Contributor: Phillip Dye

Activity Type:	Total Time Expected:	Implementation Time:
Skill Building	30-60 mins	0-30 mins

Activity Involves: Pumps/Hose Lays, Equipment Maintenance/Troubleshooting

Intent

Teams will work together to install hoselay

Learning Outcomes

Teamwork, pump operation & hoselay installation skills.

Materials Required

- Static water source
- Portable pump with containment dam in the event of fuel spills
- (4) – 100’ sections 1-1/2” hose
- (3) – 100’ sections 1” hose
- (3) – 1-1/2” to 1” “tees”
- Fuel for pump
- Check & bleeder valve
- Various adapters
- (2) - 1-1/2” nozzles
- (2) – 1” nozzles
- Wildland hose clamp

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 4 students

Description of Activity

Team members must install 300’ hoselay with appropriate “tees” and flow nozzle from the end of the hoselay

Pump & Hoselay

Contributor: Phillip Dye

Briefing for Other Instructors

- Immediately stop any unsafe actions
- Ensure proper water handling guidelines are utilized
- Ensure pump does not run dry. If it does, turn off pump and notify the team leader.

Major Briefing Points

Your Strike Team Leader has assigned the crew to establish a 300' hoselay using the equipment provided. Crew must draw water from the static water source provided.

Hoselay must have a "tee" installed at every 100'. At 300', attach the nozzle and flow water. After water is flowing from the nozzle, break down, drain, and re-roll the hose. Do not allow the pump to run dry. Make sure pump is adequately primed before starting.

At the completion of this exercise, team will conduct an AAR.

15 minutes to complete this exercise. AAR is not timed but should take no longer than 10 – 15 minutes.

One minute to review this exercise and to ask questions. <Begin timer– 1 min>Two minutes to brief your team <Begin timer – 2 minutes>

15-minute clock will now begin.

Rules for the Activity

Ensure the pump does not run dry

If it does, turn off pump and notify team leader

Maps, Images, and other Relevant Information

None for this activity.

Apple Pump and Roll

Contributor: Jennifer Mueller

Activity Type:	Total Time Expected:	Implementation Time:
Hands-On Activity	90-120 mins	60-90 mins

Activity Involves: Engines, Pumps/Hose Lays, Communications, Briefings, Initial Attack/Spotfire, Leadership Skills

Intent

Provide ENGB/ENGB-t and participants with an opportunity to practice pump and roll in a time-sensitive, non-fire environment. The ENGB/ENGB-t will also practice leadership skills and briefings during an initial attack.

Learning Outcomes

An understanding of how a crew safely works together to smoothly communicate and execute a pump and roll operation and how pump and roll could be used during initial attack.

Materials Required

Whiteboard, dry erase markers, engines (T7 up to T4, full), 2-3 apples per engine, large parking lot

Ideal Instructor to Student Ratio and Instructor Qualifications

1 ENGB-Q Instructor per Engine Crew

Description of Activity

Organize participants into 3-4 person engine crews (ENGB-t may need to rotate crews if there are not enough.) Brief ENGB-t on the activity as a group and allow them to brief their crews on the activity and how they will organize/communicate. 2-3 engines will compete simultaneously to pump and roll their apple (one per engine) across a parking lot and back. The return can involve turning the engine around with a spotter or the pump and roll can occur with the engine driving in reverse.

Apple Pump and Roll

Contributor: Jennifer Mueller

Briefing for Other Instructors

Allow ENGB-t to brief on their engines before beginning and allow time to practice correctly starting engines. Provide space for a student-led, 5-minute AAR between rotations ending with instructor feedback so crews can improve each iteration.

Major Briefing Points

Yes, you are squirting water at an apple, but take the exercise seriously! While fun, it builds fundamental skills for engine crews.

Rules for the Activity

No rules for this activity

Maps, Images, and other Relevant Information

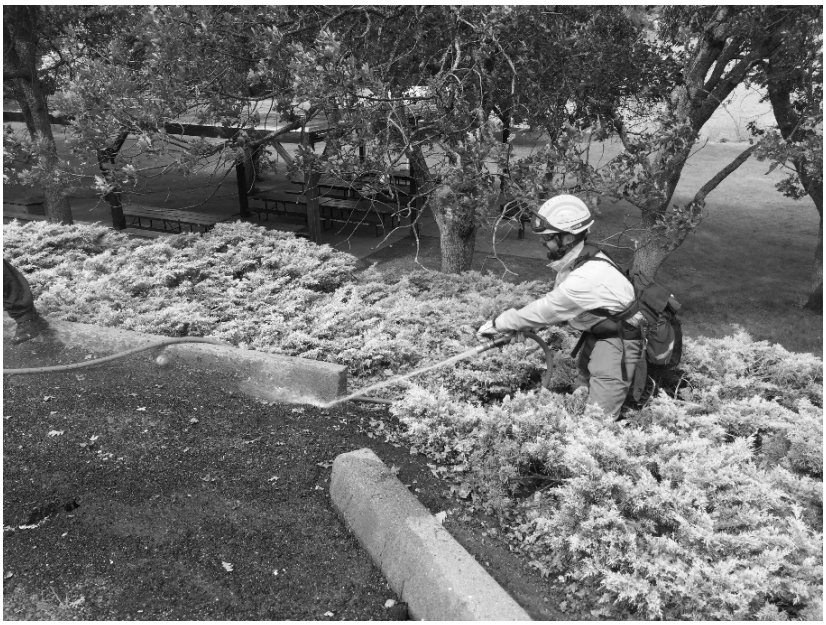


Image: *Apple Pump and Roll.* Ashland TREX 2019. Credit: Jennifer Mueller, The Ember Alliance

Group Situational Awareness Exercise

Contributor: Jennifer Mueller

Activity Type:	Total Time Expected:	Implementation time:
Hands-On Activity	30-60 mins	30-60 mins

Activity Involves: Communications, Leadership Skills, Soft Skills (e.g. conflict management)

Intent

To give participants practice in a complicated communication scenario with limited time to develop situational awareness

Develop self-awareness about how one might behave in a stressful group environment

Learning Outcomes

A new perspective on how individuals may have different situational awareness/communication strategies, and how to problem solve in a group when there are disagreements.

Materials Required

Set of dry erase markers (multiple colors) and a white board per team, paper

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor/4-5 students, no qualifications needed

Description of Activity

Divide the students into teams with the same number of people in each team (four to five per team is ideal)- each team should quickly make a team name

Number the students (e.g. 1, 2, 3, 4) within each team, and tell them that they need to remember this number!

Read students the following directions: Student #1 from each team will come up to look at the drawing, and will have 5 seconds to memorize the drawing

Group Situational Awareness Exercise

Contributor: Jennifer Mueller

Description of Activity (continued)

After the five seconds, Student #1 will go back to their team and describe the drawing with their back turned to the group. The team will have 15 seconds to draw what Student #1 describes. *The team may ask questions.*

Student #2 from each group will come up and look at the drawing for 5 seconds. Then Student #2 will go back to the team and describe the drawing to their teammates for 15 seconds. Again, the team may ask questions. Repeat with Students #3, 4, (and 5 if applicable) We will continue to rotate through the group, in order, until each person has looked at the drawing twice.

Briefing for Other Instructors

There are two drawings, A and B. Both are very similar, but slight differences intentionally exist to create communications conflict within the group (in the example the concentric circles are shifted to the left and the colors of the smaller triangles are swapped). This activity will make some groups very frustrated (even heated disagreements) and other groups will handle the situation much more calmly. Unless someone's safety is a concern allow the dynamics to play out.

Students #1, 2, and 4 will view drawing A (the same drawing)

Student #3 will view drawing B (VERY similar to drawing A, but slight differences exist). Discretely swap the drawing between students 2 and 3, and then again between 3 and 4. Make sure the orientation of the drawing is the same. Cover the drawing with a blank piece of paper (or use a folder to cover it) and allow participants to view for five seconds.

Please be mindful of colorblindness and avoid using red and green together in the drawing

It's crucial that you maintain a good poker face and don't let on that the game is rigged!

Group Situational Awareness Exercise

Contributor: Jennifer Mueller

Major Briefing Points

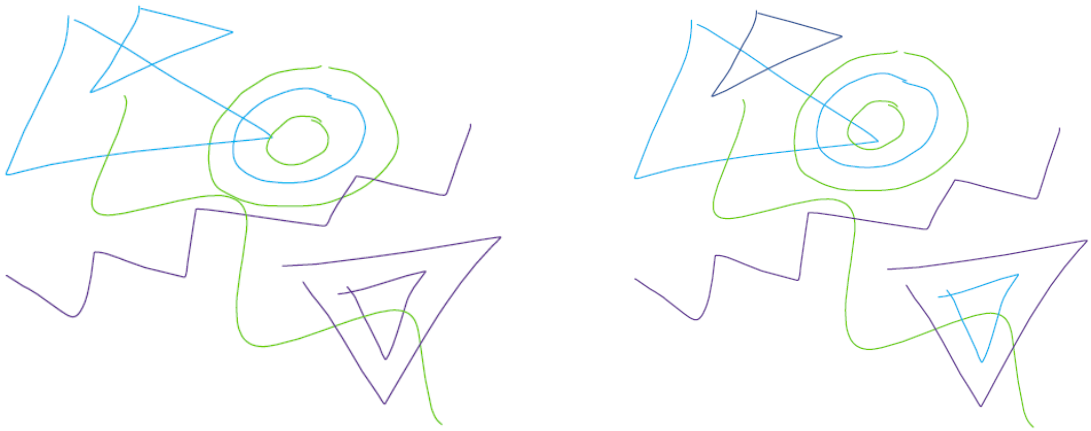
The game is intended to help you quickly develop situational awareness and practice your communications skills by conveying limited information in a short amount of time. When you are on a fire, radio communications are effectively painting a picture for the person who is not in the same location as you. Often this occurs during an urgent situation when quick, concise communication is critical. Comms may be broken or hard to understand so this game is designed to simulate a similar situation.

If you have played this game before, please allow others to benefit as you did.

Rules for the Activity

Details matter! The team with the drawing that most closely matches that of the instructors will win a prize.

Maps, Images, and other Relevant Information



These two images above are very similar but have subtle differences

Image Credit Jennifer Mueller, The Ember Alliance

Chainsaw Parts & Maintenance

Contributor: Jesús Morcillo

Activity Type:	Total Time Expected:	Implementation time:
Hands-On Activity	90-120 mins	30-60 mins

Activity Involves: Chainsaws, Leadership Skills, Lessons Learned

Intent

1. Learn to recognize the chainsaw parts

2. Learn to recognize the different systems that make up the structure of a chainsaw

3. Learn how to implement the specific maintenance of each component

4. Learn how to implement proper chain maintenance

Learning Outcomes

Chainsaws are complex tools, and their use involves risks for the operator itself. The participants will leave being knowledgeable about all the chainsaw's safety mechanisms and will know the proper way to maintain the tool. This will enable them to work in a safer way and extend the life of the chainsaw itself.

Materials Required

Chainsaws, chainsaw maintenance equipment, and all relevant PPE

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor per 6 students

Description of Activity

On a table or flat surface, the trainer describes the safety elements of the machine

Each element has a purpose and was developed through accidents and lessons learned

The machine is then disassembled and the different elements, their operation, cleaning, and maintenance are described

The session ends with the cutting element and sharpening tips

Chainsaw Parts & Maintenance

Contributor: Jesús Morcillo

Briefing for Other Instructors

The instructor must complete the exposition of all the elements exposed in the attached file. Time management is indicative and must be adapted to the specificities of the concrete session.

Major Briefing Points

The attached document is delivered to the participants. This way they get an overview of the content they will see in the session.

Rules for the Activity

Respect and mutual learning are the main rules. The instructor leads the exposition of the elements of the chainsaw in a didactic way. Participants can play and practice themselves under the instructor's attention. Doubts and impressions are raised and shared at all times.

Maps, Images, and other Relevant Information

See Appendix E on pgs. 92-93

3-Way Medical Training Scenario

Contributor: Kody Wohlers

Activity Type:	Total Time Expected:	Implementation Time:
Hands-On Scenario	60-90 mins	30-60 mins

Activity Involves: Personal Preparedness, Equipment Maintenance/Troubleshooting, Communications, Briefings, Medical response, Basic Fireline First Aid, Planning, Leadership Skills, Situational Awareness/ 10&18s

Intent

To build communication skills, decision-making skills, and crew cohesion while managing an incident within an incident. Also, to involve outside incoming medical responders and 911 dispatchers for their additional training on communication and extraction from a tough location.

Learning Outcomes

Identify proper briefing and size-up to dispatch while calling 911 via cell phone. Medical extraction assistance utilizing crew on tough terrain. Medical triage while waiting for responders to get on site.

Materials Required

1 EMT Qualified Instructor, patient, backboard, UTV, ambulance or helicopter

Ideal Instructor to Student Ratio and Instructor Qualifications

1 EMT qualified instructor to every 10 students

Description of Activity

Medical scenario in which the first "on-scene" firefighter will call 911 dispatch. 911 dispatch utilized their system to "ping" the location of the cell phone and dispatched the closest volunteer fire department. The VFD utilized their UTV with a medical extraction skid in the back. Additional firefighters were utilized to assist in moving the patient off a steep grade to the UTV, load the patient, extricate the patient, and load the patient in the ambulance.

3-Way Medical Training Scenario

Contributor: Kody Wohlers

Briefing for Other Instructors

Preplan with local dispatch/911 center that it is a "staged" scenario. Have responding medical personnel pre-identified and at the fire station to keep timetable minimized.

Major Briefing Points

Only identify the patient to the group who will be playing "hurt"

Rules for the Activity

It can be very basic, or you could go all-out

Maps, Images, and other Relevant Information

See Appendix F on page 94

Burn Planning Scenario with Briefing

Contributor: Katie Sauerbrey

Activity Type:	Total Time Expected:	Implementation Time:
Sand Table/Thought Exercise	60-90 mins	0-30 mins

Activity Involves: Briefings, Ignitions, Holding, Planning

Intent

The purpose of the activity is to provide an opportunity for a TREX module to look at real examples of burn plans, work together to plan firing patterns and a holding plan, then to practice briefing others on the plan.

Learning Outcomes

Read through and discuss the portions of the burn plan relevant to the trainees' experience level and role. Read and interpret a spot weather forecast for the burn area. Gain experience developing a firing or holding plan for a specific burn unit under the given weather forecast. Work with a team to ensure the plan is coordinated and will meet burn unit objectives, an ICS structure is in place, LCES etc. Gain experience delivering a briefing as the trainee's role within the burn team

Materials Required

Real burn plan containing units that have been burned in the local area (ideally somebody on the TREX IMT or Module leadership was on or led the burn so they can answer questions - *printed copies x3*)

Spot weather forecast for the actual day the burn unit was carried out (this can be obtained using the NWS archive)

Large print out map of the burn unit so the modules can write/draw on it and use it for their briefing if they choose to; a print out of a burn briefing checklist to follow can be helpful here for RXB2(t)

Ideal Instructor to Student Ratio and Instructor Qualifications

Number of instructors per number of students is dependent; relevant NWCG qualifications or similar experience is preferred

Burn Planning Scenario with Briefing

Contributor: Katie Sauerbrey

Description of Activity

This is a team-building, burn planning, and briefing scenario based on real-life burn units from the local area

Briefing for Other Instructors

Prior to this activity it is helpful to have provided information to the participants about what a burn briefing should entail and have one of the experienced cadre members do an example briefing.

For this activity, break into modules (ideally not greater than 10 participants). You will want to have at least 1 RXB2t, 1FIRBt, 1SRBt (for holding dependent on how the team breaks out duties i.e. divisions or whole burn) within each module. If there are multiple, they may work together as a team based on their trainee roles to develop the plan. For participants who are not in these roles, they will still gain experience in reading the parts of the burn plan listening to / participating in the planning session. Questions should be encouraged!

Provide each group a full copy of a burn plan with maps for a burn unit in the area (outside is okay too as long a somebody in a mentor role can answer questions about local information and fuels), a spot weather forecast used previously to burn on the unit, and a large, printed map of the burn area for the group to draw on. You will also need to provide them with a list of available resources to carry out the burn on that given day. In the past I have listed the actual resources that participated on the burn.

Tell the group they have 45 minutes to read the relevant portions of the burn plan to their role and work with their team to plan on how they will implement the burn (firing plan, holding plan, LCES, etc.). Following their planning session, they will be providing a briefing (as a team based on their roles) to the other modules. The other modules will have an opportunity to ask questions about their plan. Cadre will then provide feedback on the briefing.

Burn Planning Scenario with Briefing

Contributor: Katie Sauerbrey

Briefing for Other Instructors (cont.)

It is helpful to assign a different unit to each module because it makes briefings less redundant, and you get better questions. You may prompt the modules to include everybody in the briefing offering opportunities to speak in front of the group from FFT2 to RXB2 (such as providing weather briefing or objectives).

Major Briefing Points

In this exercise you will be broken into teams, and you will be planning an implementation plan for a burn. The burn you will be planning is based on a local unit that has been burned before. You will receive a spot weather forecast for the burn area. Once you develop an implementation plan you will provide a briefing to the other burn modules on your specific burn unit.

Within each module you will assign roles for your burn team based on your current trainee role or interest. At a minimum you will need to have assigned an RXB2, a FIRB, and a HOLB. Based on the size of your module you may have multiple people representing each role and working as a team to develop the plan. Group members who are not in the trainee roles may choose to sit in on one planning session or move around to learn and ask questions. It is also okay to assign more roles as your team sees fit.

Based on your role within your burn team, review the relevant portions of the burn plan to your position. Based on the information in the burn plan (the maps, available resources, and any guidance from instructors,) prepare a plan for your portion of the burn. Coordinate with others in your team to ensure you're accounting for safety, burn objectives, available resources, efficiency, etc. Prepare to give a briefing on your portion of the burn operation (overarching burn boss briefing, firing plan briefing, holding plan briefing, etc.). Everyone in your group should participate in the briefing.

Activity 23: Burn Planning Scenario with Briefing

Contributor: Katie Sauerbrey

Major Briefing Points (cont.)

You may ask questions to the instructor who will likely have experience in that specific burn location. Encourage questions within your group, as this is a learning opportunity for folks with all experience levels.

You will have 1 hour to plan your burn and prepare your briefing. Your briefing will need to be fifteen minutes or less, which is fast. Focus on clear and concise communication. Other modules will have an opportunity to ask questions following briefing and the cadre will provide briefing feedback.

Rules for the Activity

Everybody will be engaged in a role or as a team in a role

Everyone will speak during the burn briefing

Questions are encouraged (to the cadre and within the modules)

Maps, Images, and other Relevant Information

See Appendix G on pgs. 95-96

6 Minutes for Safety Skits

Contributors: Erin Banwell and Miller Bailey

Activity Type:	Total Time Expected:	Implementation Time:
Hands-On Scenario	0-30 mins	0-30 mins

Activity Involves: Hands-on Scenario, Thought Exercise, Skill Building, Crew Cohesion

Intent

Team Building, Leadership, Communications, Skill Building, Situational Awareness

Learning Outcomes

Understanding 6 minutes for safety topics, communication skills, team building, leadership, fun

Materials Required

A handful (use your class size to determine what # is sufficient) of appropriate 6 minutes for safety topics that have been printed out beforehand.

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor to any class size

Description of Activity

6 Minutes for Safety Skits from Squads

6 Minutes for Safety Skits

Contributors: Erin Banwell and Miller Bailey

Briefing for Other Instructors

Only one instructor is necessary. It is critical instructor chooses the appropriate 6 minutes for safety topics that can be taught and acted out. There are many to choose from- Leading Up, 5 Communication Responsibilities, Leaders Intent, Developing a Learning Organization, Command Presence, etc.

See briefing below for more information. *Each squad should have a different topic.*

Major Briefing Points

- Break group into squads (no more than 10 per squad)
- Each squad will have a different 6 minutes for safety topic (print out for each squad member)
- Each squad will "teach" the group about their 6 minutes for safety topic via interactive method (skit, facilitative discussion, etc.)
- Squads will have 12 minutes to develop their presentation
- Each squad will have 6 minutes to deliver a presentation to the group
- All squad members are expected to participate

Rules for the Activity

See above briefing for participants

Maps, Images, and other Relevant Information

None for this activity

Medical Training Scenario

Contributor: Jennifer Mueller and Leah Mathys

Activity Type:	Total Time Expected:	Implementation Time:
Hands-On Scenario	90-120 mins	60-90 mins

Activity Involves: Communications, Briefings, Medical response, Basic Fireline First Aid, Planning, Leadership Skills

Intent

Provide tools for TREX leaders to facilitate hands-on and/or scenario-based emergency medical response.

Learning Outcomes

1. Utilize the Pocket Medical Risk Management Guide (MRMG) and IRPG to practice the process of emergency medical response. In particular:
    a. TREX Medical Emergency Response Field Protocol
    b. Medical IC Delegation of Non-Medical Tasks
    c. Medical Incident Report (MIR)
2. Identify ICS within the incident and practice documentation
3. Communicate clearly and concisely using dispatch
4. Determine if the patient is sick or not sick
5. Allow EMT and WFRs to work on patient while assigning meaningful participation roles for non-medical crew members
6. Determine transportation and contingency plan

Materials Required

Pocket Medical Risk Management Guide (MRMG) – can be found on the fire network resource page.

Consider using radios to practice communication between dispatch and those providing care (be sure to use a frequency that is not monitored so the scenario is not mistaken for a real emergency)

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor to about 15 students

Medical Training Scenario

Contributor: Jennifer Mueller and Leah Mathys

Description of Activity

Hands-on medical scenario that focuses on the *process* of emergency medical response. Allows all participants to serve an active role regardless of their medical training, or lack thereof.

Briefing for Other Instructors

Assign a patient (instructor or participant) and dispatch (an instructor). If a Medical Unit Leader is available, encourage them to be involved in the scenario as a patient, for patient programming, during debriefing, etc.

Allow participants to work through the TREX Medical Response Field Protocol and Medical IC Delegation of Non-Medical Tasks in the Pocket Medical Risk Management Guide (MRMG). If they are not providing critical information (#5 in TREX Medical Response Field Protocol) please prompt them. If they ask for transportation, the following is available: ambulance 60 minutes out, helicopter 60 minutes out.

Take notes to provide constructive feedback during the debrief. Consider multiple repetitions of the same or similar scenarios to allow participants to reflect and improve.

Major Briefing Points

Briefing:

1. Focus less on the medical care given and more on the *process* of delegation and patient transport
2. Emphasize that individuals without medical training should still participate, and that all team members play a valuable role
3. Encourage students to use the MRMG Pocket Guide and IRPG in combination as checklists, which will ensure critical steps are not overlooked
4. Encourage students to step out of their comfort zone and try a new role; those who are normally in leadership positions should consider practicing being a good follower, and vise-versa

Medical Training Scenario

Contributor: Jennifer Mueller and Leah Mathys

Debriefing/ AAR afterwards: (Delegate to participant, if split into multiple scenarios consider debriefing as one large group)

1. Ask a volunteer to give a clear and concise radio report for:
    a. # Individuals involved and patient priority based on injuries
    b. Injury/Injuries found and Mechanism of Injury
    c. Current location/Access to patient
2. Any constructive feedback from the group? From dispatch?
3. What challenges did your patient present for both care providers and supporting crew?
4. What were the strengths of the team?
5. Is this patient considered sick or not sick?
6. If you do not have medical training, how did you participate in the success of patient care?
7. Any questions about the process?

Rules for the Activity

See above briefing for participants

Maps, Images, and other Relevant Information

See Appendix O for example scenario on pg. 134

Field Leadership Activity Stations

Contributor: Phillip Dye

Activity Type:	Total Time Expected:	Implementation Time:
Hands-On Scenario	30-60 mins	0-30 mins

Activity Involves: Communications, Briefings, Leadership Skills, Medical response, Situational Awareness/ 10&18s, Soft Skills (e.g. conflict management)

Intent

Provide briefing, communicate leader's intent, problem solve in a time-compressed situation.

Learning Outcomes

Better develop the skills listed above

Materials Required

See Appendix H on pages 97-99 for materials required in each station

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 4 students

Description of Activity

Participants will go through stations after receiving briefing about ongoing situation in each scenario

Briefing for Other Instructors

There are no textbook solutions or “right” answers to any given task. Allow for creativity & solutions different from how instructors would perform them. this should be a fun & experiential learning opportunity. See Appendix H on pages 97-99 for scenario prompts.

Field Leadership Activity Stations

Contributor: Phillip Dye

Major Briefing Points

There are no textbook solutions or “right” answers to any given task. Be creative, participate, & work together as a team to discuss alternative outcomes & potential solutions for each scenario.

Rules for the Activity

If leaders fail to perform hazard assessments and supply risk mitigations, instructors will show importance of doing so by inflicting simulated injuries & thus providing additional challenges to the teams.

Maps, Images, and other Relevant Information

None for this activity

See Appendix H on pgs. 97-99 for additional details regarding this activity

AAR and Briefing Philosophy

Contributor: Ben Wheeler

Activity Type:	Total Time Expected:	Implementation Time:
Sand Table/Thought Exercise	0-30 mins	0-30 mins

Activity Involves: Briefings, Leadership Skills

Intent

Participants can discuss different ways to run an AAR and share various AAR cheat sheets. This can be extended to briefings as well.

Learning Outcomes

Improved understanding of the purpose of an AAR and various ways to conduct an AAR depending on the context and audience. Similarly, participants can share tips/tricks for conducting briefings.

Materials Required

IRPG and AAR cheat sheets (see Appendix I on pg. 100) as well as any home unit briefing checklists participants may have.

Ideal Instructor to Student Ratio and Instructor Qualifications

Groups of 5-7 to facilitate discussion

Description of Activity

Lead a discussion on the intent of AARs and share different ways participants conduct AARs on their home units. This can be extended to include briefings as well.

Briefing for Other Instructors

In true AAR fashion, facilitate the discussion but allow participants to do most of the talking. Focus on open-ended questions such as ‘How can this approach help improve our outcomes?’ or ‘What is your experience when you used this briefing format?’ or ‘How can we get participants more involved in briefings?’

AAR and Briefing Philosophy

Contributor: Ben Wheeler

Major Briefing Points

None for this activity

Rules for the Activity

None for this activity

Maps, Images, and other Relevant Information

See Appendix I on pg. 100

14 Leadership Traits

Contributor: Jennifer Mueller

Activity Type:	Total Time Expected:	Implementation Time:
Sand Table/Thought Exercise	0-30 mins	0-30 mins

Activity Involves: Leadership Skills, Soft Skills (e.g. conflict management)

Intent

Provide a structured approach to allow participants to improve their leadership traits over time.

Learning Outcomes

An understanding of different traits that individuals can develop to create their own leadership style.

Materials Required

Pen, and print out of '14 Leadership Traits' (see Appendix J on pg. 101)

Ideal Instructor to Student Ratio and Instructor Qualifications

None for this activity

Description of Activity

Introduce the 14 Leadership Traits and give participants time to work through their definitions (independently or in small groups if they prefer). Consider facilitating a discussion about the benefits and limitations of using these traits (e.g. benefit is that it is a proven method to develop leaders, limitation is that it does not address all types of different leadership styles).

Briefing for Other Instructors

These 14 Leadership Traits were developed by the US Marine Corps and are foundational to their style of leadership

14 Leadership Traits

Contributor: Jennifer Mueller

Briefing for Other Instructors (cont.)

Many other styles of leadership exist- this is just one example. Participants can work on the traits they think are best suited to their style and may be inspired to explore new traits.

Major Briefing Points

For each of the 14 leadership traits:

- Write down your definition of the term (if you're unsure you can look it up) and rate yourself
- Pick one or two traits you would like to improve upon
    - Work on those traits over the next few months and repeat the exercise once or twice a month to see how you are improving
- Be honest with yourself and try not to pass judgement– this is an exercise for gradual self-improvement over time
- Consider sharing your areas for improvement with your co-workers or a supervisor who would be open to helping you improve and will hold you accountable
- When you have achieved the level you would like, pick a few more traits and start the process over
- We all have room for improvement; be kind and patient with yourself– change doesn't happen overnight but rather with lots of small actions repeated frequently over time

Rules for the Activity

None for this activity

Maps, Images, and other Relevant Information

See Appendix J on pg. 101

Active Bystander Training

Contributor: Tyler Gilbert, Megan Matonis, Kristin Leger

Activity Type:	Total Time Expected:	Implementation Time:
Sand Table/Thought Exercise	30-60 mins	0-30 mins

Activity Involves: Communications, Leadership Skills, Soft Skills (e.g. conflict management)

Intent

Provide participants with an opportunity to practice diffusing stressful situations that are commonplace in the work environment

Learning Outcomes

Impart tools and skills needed to safely and effectively diffuse situations that put people in uncomfortable situations and may lead to altercations or potentially dangerous workplace situations.

Recognize that problematic behaviors exist in the fire community, and learn how to identify them so we don't repeat them in the future

- Try not to replicate harmful work culture
- You can be an active bystander by standing up and saying something
- Lead by example!

Materials Required

Open minds and vulnerability to learn

Optional to print copies of 'Bystander Situations' for each team

See Appendix K on pgs. 102-105 for bystander scenario narratives

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 10 students

Active Bystander Training

Contributor: Tyler Gilbert, Megan Matonis, Kristin Leger

Description of Activity

Discuss how and why each of the following scenarios might be inappropriate for the workplace. If you are comfortable with doing so, talk about times similar situations have happened to you or someone you know, and what was done (or not done) in that moment to remedy the situation.

Briefing for Other Instructors

Thoroughly read through and discuss of each of the situations. Consider why the topics discussed in the scenarios might have made people feel uncomfortable, and what could be done differently next time to make a person feel safe and validated or to prevent this from happening altogether. Bring conversations back to principals of integrity, duty, and respect that all wildland fire professionals adhere to.

Major Briefing Points

More than likely, we have heard or witnessed something inappropriate in a professional setting. When we choose not to act in this scenario, we then become what is referred to as a *bystander*. When the bystander decides to speak up about that the inappropriate behavior or comment, this is when their transition to *active bystander* begins. An active bystander is an individual who stands up for themselves and others when these situations occur. In this activity, we'll be going through some real-world scenarios and discussing what happened in the scenario, why the situation would make someone uncomfortable or feel unsafe, and what we can do as active bystanders to diffuse similar situations.

Rules for the Activity

Listen to differences in opinion with respect and recognize the difference between intent versus impact. Do not disrespect or disparage the individuals talked about when sharing real-life experiences.

Maps, Images, and other Relevant Information

See Appendix K on pgs. 102-105 for bystander scenario narratives

Indigenous Fire Management

Contributor: Tyler Gilbert

Activity Type:	Total Time Expected:	Implementation Time:
Sand Table/Thought Exercise	Any Amount of Time	0-30 mins

Activity Involves: Cultural Resources

Intent

Learn more about current and historic indigenous burning practices using the resources provided

Learning Outcomes

Understanding and appreciation of indigenous knowledge with respect to fire use and management

Materials Required

Time to discuss 1-2 materials found in appendix. Potential need for audio/visual and projection equipment should videos be chosen to review. Print out materials if no internet access will be available at time of activity.

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 15 students

Description of Activity

When thinking about prescribed fire in North America, who do you think of when it comes to the first people historically to use it? If it's not an indigenous group, then you are in luck! You've been given an opportunity to learn more about the history of fire management from an indigenous use framework. Please utilize the resources and tools found in the appendix for this section to learn more about cultural uses of fire.

Indigenous Fire Management

Contributor: Tyler Gilbert

Briefing for Other Instructors

Choose 1-2 resources to discuss depending on amount of time allocated to this activity

Major Briefing Points

Review the chosen material(s) as a group

Discuss how you could utilize indigenous knowledge within your program. If this is not applicable to your current work, put yourself in the shoes of a federal land manager working to better integrate indigenous knowledge into your forest resource management plan revision.

- How would you go about integrating this knowledge into your theoretical plan?
- How would you reach out to your local tribe(s) for comment? Would you reach out?
- Would you include a land acknowledgment? Why or why not?

Rules for the Activity

Keep an open mind and never stop learning

Maps, Images, and other Relevant Information

See Appendix L on pg. 106 for cultural resources

Individual Personality Exercise

Contributor: Tyler Gilbert

Activity Type:	Total Time Expected:	Implementation Time:
Sand Table/Thought Exercise	30-60 mins	0-30 mins

Activity Involves: Communications, Soft Skills (e.g. conflict management)

Intent

Learn about ways to better understand others through multiple different lenses

Learning Outcomes

Better understanding of people you may work with that are different from you

Materials Required

Writing materials (white boards & markers, pen and paper, etc.) for students to chart individual identity maps

Print out pgs. 1 & 2 of the *Reflective Exercise* from Strategy for Patient Oriented Research (SPOR) if internet connection will not be available when conducting activity

Additional materials found in Appendix M on pg. 107

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 5 students

Description of Activity

What makes you unique? Is it your career? Your position in society? Your age? Or a combination of those identities combined? In this exercise, we are going to explore the various factors of our interconnected social factors to learn more about what makes us unique. In doing so, we'll also likely identify some similarities within the group.

Individual Personality Exercise

Contributor: Tyler Gilbert

Briefing for Other Instructors

None for this activity

Major Briefing Points

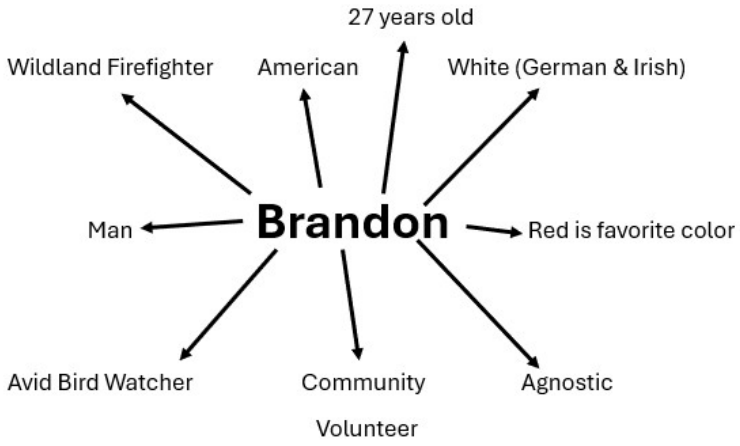
Read pgs. 1& 2 of the *Reflective Exercise* from SPOR in Appendix M & review the questions in small groups. Give group members 3-5 minutes time to generate their own identity maps. Allow students to think of their own categories. Never require students to disclose personal information- this must be the students' decision to disclose any of this information.

Rules for the Activity

Keep an open mind and remember these are personal attributes of people's identity, not theoretical attributes of non-existent humans

Maps, Images, and other Relevant Information

See Appendix M on pg. 107 for discussion questions & additional materials



Example Identity map; Image Credit: Tyler Gilbert, The Ember Alliance

Shelter Deployment Lessons Learned

Contributor: Phillip Dye

Activity Type:	Total Time Expected:	Implementation Time:
Sand Table/Thought Exercise	30-60 mins	0-30 mins

Activity Involves: Communications, Soft Skills (e.g. conflict management)

Intent

Learn about and from an event that occurred October 13th, 2014 in Redwood National Park during the NorCal TREX

Learning Outcomes

Better understanding of actions & events that occurred apart of the Upper Lyons prescribed fire shelter deployment

Review of personal planning processes, briefings, & communications skills

Materials Required

Upper Lyons Prescribed Fire entrapment and fire shelter deployment facilitated learning analysis (FLA) activity document(s) found in Appendix N on pgs. 108-133

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 5 students

Description of Activity

Read through the details found in the Upper Lyons Rx fire shelter deployment facilitated learning analysis (FLA). Think & discuss as a group what occurred, what challenges were faced, what could have been done differently, and what the team did correctly. Think about ways you could confirm all messages are heard and understood at a large fire briefing, and about what your contingency plan development process would look like for this incident.

Shelter Deployment Lessons Learned

Contributor: Phillip Dye

Briefing for Other Instructors

None for this activity

Major Briefing Points

None for this activity

Rules for the Activity

Treat the learned activity from this lesson with the gravity and respect it deserves. It is easy to criticize the actions of individuals after the fact, but it is important instead to reflect on the events that occurred and treat them as a learning opportunity that can potentially save lives.

Maps, Images, and other Relevant Information

See Appendix N on pgs. 108-133 for full Upper Lyons Prescribed Fire entrapment and fire shelter deployment facilitated learning analysis (FLA)

Photo Credit: Phillip Dye, Prometheus Fire Consulting

Cross the Rivers

Contributor: Phillip Dye

Activity Type:	Total Time Expected:	Implementation Time:
Drill to Edge of Failure	30-60 mins	0-30 mins

Activity Involves: Situational Awareness/ 10&18s, Communications, Leadership Skills

Intent

Team must navigate to safety using communication skills and teamwork

Learning Outcomes

Teamwork & communication skills

Materials Required

- Flagging or rope-
  4 sections, each 20’ long
- One 12”x12” square of wood, plastic, cardboard, or rubber for each team member

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 4 students

Description of Activity

Team must cross rivers using only the squares

Briefing for Other Instructors

- Stop activity if you observe unsafe actions
- Follow time limits

Major Briefing Points

(Optional) Watch a video explanation here on YouTube (https://youtu.be/uks82S8-Rrg)

Cross the Rivers

Contributor: Phillip Dye

Major Briefing Points (cont.)

Participants must retreat to safety zone but encounter two rivers. The entire team must cross both rivers using only the squares provided. Once a square is placed in the river, a teammate must stay in contact with the square at all times or it is lost downstream in the raging river. Feet can make contact with the water if they are also touching the shore or a square at same time. Teammates may never touch the water with their hands. However, squares may be picked up and replaced by hand.

If a team member loses contact with a square or the shore, that team member must go back to the starting shore. If the entire team makes it successfully across the first river, but someone subsequently falls in the second river, that person only needs to return to the island. At the completion of this exercise, team will conduct an AAR.

You have 15 minutes to complete this exercise before fire overruns the teams' position. AAR is not timed but should take no longer than 10 – 15 minutes.

Teams will now have one minute to review this exercise and to ask questions

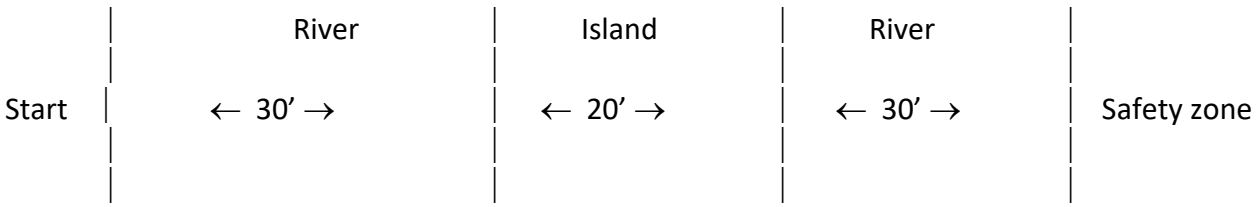
Begin timer– 1 min

Rules for the Activity

- Stop activity if unsafe actions are observed
- Follow time limits
- Ensure contact is always made with squares; a team member may be touching water if a part of their foot is also touching the "stone"

Maps, Images, and other Relevant Information

Place rope/flagging on ground in straight lines like this (modify width to fit team size):



Spot Fire Drills

Contributor: Ben Wheeler

Activity Type:	Total Time Expected:	Implementation Time:
Drill to Edge of Failure	60-90 mins	60-90 mins

Activity Involves: Fire Behavior, Engines, Pumps/Hose Lays, Communications, Leadership Skills, Briefings, Initial Attack/spot fire

Intent

Allow participants to drill on multiple spot fires including size-up, initial attack, and prioritizing values at risk in a supported environment. Build a slide in their slide deck that includes a stressful situation where their skills are tested, but not to the point of failure.

Learning Outcomes

1. Experience performing a correct size up using the IRPG and communicating over the radio
2. Understanding it is better to call for additional resources early on if not immediately able to extinguish the spot
3. A better understanding of the flow of initial attack
4. A simulation of real-life stressors that occur when decisions need to be made rapidly with limited information
5. Provide ICT5 opportunities when appropriate
6. Optional – depending on the audience it could be appropriate to practice a conversion to wildfire

Materials Required

A lighter or matches and a location where a spot fire can be safely ignited and allowed to grow in size (e.g. in an unburned patch during mop-up or in a burn unit surrounded by black).

Spot Fire Drills

Contributor: Ben Wheeler

Ideal Instructor to Student Ratio and Instructor Qualifications

N/A – whomever you already have on the fireline is appropriate

Description of Activity

In an appropriate location (unburned patches, an adjacent unit surrounded by black, etc.) put a spot fire where participants will find it after it has had a modest amount of time to grow in size. Once participants are fully committed to the spot, start another one. This will force them to reallocate resources and prioritize. You can continue laying down spots as needed but be careful not to push participants to failure. The idea is to simulate the experience of a stressful simulation in a controlled environment, allow them to make mistakes, and learn how to improve each iteration.

Briefing for Other Instructors

1. This exercise is intended to be a surprise for participants – *do not give them a heads up*
2. Closely monitor participants to ensure they are being pushed beyond their comfort zone, but not pushed to failure
3. Do a thorough AAR afterwards

Major Briefing Points

When participants report the spot, ask for a size up and tell them to put it out

Rules for the Activity

No rules!

Maps, Images, and other Relevant Information

None for this activity

Search & Rescue

Contributor: Phillip Dye

Activity Type:	Total Time Expected:	Implementation Time:
Drill to Edge of Failure	30-60 mins	0-30 mins

Activity Involves: Medical response, Basic Fireline First Aid, Leadership Skills, Situational Awareness/ 10&18s

Intent

Determine plan to extract injured patient & search for child involved in a vehicle collision. Participants will be timed or "overrun by a wildfire."

Learning Outcomes

Teamwork, medical response, extraction, SAR skill building

Materials Required

Any suitable material to represent an adult and child (could be manikins, sack of sand or cement, etc.)

A litter with straps

Ideal Instructor to Student Ratio and Instructor Qualifications

1 instructor for every 4 students

Description of Activity

Transport injured adult to engine; determine how to search for child, if at all

Briefing for Other Instructors

- Set-up adult and child litter next to each other far enough down road/trail so team cannot make visual and begin initial briefing to team leader out of sight of "accident" scene.
- Adult must be secured to litter at the end of the 15 minutes
- Provide regular updates to team leader on status of "fire" to create sense of urgency
- Hide simulated child to make it difficult, but not impossible to find

Search & Rescue

Contributor: Phillip Dye

Major Briefing Points

Assume you are travelling in your agency's engine. You are currently assigned to the 237 Fire. You have been requested on the radio to drive down this section of road and tie-in with the Division Supervisor who will have an assignment for you. Fire behavior is significant and erratic.

<Facilitator: Allow team leader one minute to ask questions and two minutes to brief crew>

Follow me.

<Facilitator: Walk down trail and upon arrival at "accident scene" *read this>*

You have just come across a civilian single-vehicle accident. The vehicle appears to have driven off the road and into a tree. There is major damage to the vehicle. The "adult" you see lying on the ground remains conscious only long enough to tell you that his 3-year-old child (describe "child") has wandered away from the accident scene and might be hurt also.

After reporting the accident to the Division Supervisor, she advises you that you must leave your current location in 15 minutes, or you will be overrun by fire. There is no nearby safety zone, and this location is not survivable with shelters or in the engine. The adult must be secured to the litter carry and transported to the "engine".

You must leave the area in 15 minutes

At the completion of this exercise, team will conduct an AAR.

Start 15 minute timer

Rules for the Activity

Work together & maintain SA to successfully save as many people involved as possible

Maps, Images, and other Relevant Information

None for this activity

Appendix A: Contributor Directory

Organized alphabetically by last name

- **Virginia Avery**; *Avery Counseling & Services, LLC*
  virginiaavery@counselingandservices.com
- **Erin Banwell** and **Miller Bailey**; *The Watershed Center-*
  firemanagement@thewatershedcenter.com, 928-707-9574
- **Jenifer Bunty**; *Consortium of Appalachian Fire Managers & Scientists-*
  jen@cafms.org, 321-745-5941
- **Phillip Dye**; *Prometheus Fire Consulting-* phil@prometheusfireconsulting.com, (408)807-1963
- **Jennifer Fawcett**; *North Carolina State University-* jlevans3@ncsu.edu, (919)515-8288
- **David Futa**; tsi2calm@gmail.com, (574)400-9893
- **Leah Mathys**; *The Ember Alliance-* Leah.Mathys@EmberAlliance.org
- **Megan Matonis**; *The Ember Alliance-* Megan@EmberAlliance.org, (970)217-6473
- **Jesús Morcillo**; morcilloijulia@hotmail.com, +34654481778 (resident of Spain)
- **Jennifer Mueller**; *The Ember Alliance-* jennifer@emberalliance.org, (303)378-4096
- **Greg Philipp**; *United States Forest Service-* gregory.philipp@usda.gov, (828)460-0049
- **Katie Sauerbrey**; *The Nature Conservancy-* katie.sauerbrey@tnc.org, (360)601-5681
- **Ben Wheeler;** *Nebraska Game & Parks Commission,* ben.wheeler@nebraska.gov, (308)750-2652
- **Kate Williams**; *Washington Department of Natural Resources-*
  kate.williams@dnr.wa.gov, (360)890-0882
- **Kody Wohlers**; *Iowa Natural Heritage Foundation-* kwohlers@inhf.org, (402)578-1935

Appendix B: Words on Fire Exercise

Contributor: Kate Williams

Instructors can watch Stephen Pyne's key note speech (video at bottom of page): https://liberalarts.oregonstate.edu/feature-story/dr-stephen-j-pyne-words-we-use-describe-world-fire#:~:text=Words%20can%20give%20expression%20to,set%20the%20world%20on%20fire.%E2%80%9D

Main takeaways: "Words, texts, languages – these are normally considered the stuff of the humanities. But words, good, bad, and ugly, saturate fire management. They have consequences. We ought to understand them better." – Stephen Pyne

- Fire is often spoken of as a threat/enemy, but it's not a moral entity (fire cannot have intent)
    - Discuss a summarized version of how our history with fire suppression has shaped our language.
        - The Big Burn of 1910 created a fear of wildfire consuming natural resources and destroying communities
        - Veterans from WWI and WWII became foresters and firefighters, introduced military terms & mentality
        - USFS enacted 10 AM policy utilizing CCC in 1935
        - Forest Service softened policy in 1970 after decades of aggressive suppression and growing scientific evidence that suppression is negatively affecting forest ecology
        - If people are trained to think a certain way, they often continue to think that way even if policy changes. Actions and language follow thoughts.

- Communication about fire can be difficult because we as a fire community haven't always agreed on what we want to say; we can more often identify what we *don't* want to say
    - We tend to take notes from George Orwell: "instead of picking out words for the sake of their meaning and inventing images to make the meaning clearer, we have the reverse…It's not that our words can't say what we want, but that we seem afraid to say clearly what we really do want."
    - Compare: "War is peace" → "Good fire prevents bad fire"
    - Nuance is difficult to communicate so we often generalize

- Can a burn be bad one year and good the next? Does all of a fire footprint need to be bad/good? Can it be bad for some and good for others?

Appendix B: Words on Fire Exercise

Contributor: Kate Williams

- Modern fire language (ex: hotspotting, coldtrailing, back-firing) speaks to actions, not to ideas
    - Firefighting = nouns → verbs
    - Fire management = verbs → nouns
    - Similar language can mean different things to different people
        - Ex: a "ridge" in the SE can be very different from a "ridge" in the west, black-lining tactics in the Midwest in grass can look different than western timber
    - Discuss "controlled burning" (verb) vs. "prescribed fire" (noun)
        - "Controlled" burning implies burners have control over the outcome vs. "prescribed" implies there are set conditions to achieve a desired end-state
        - How might the public differentiate in understanding between the two?
    - We need new descriptive terms to meet new concepts
- What are common fire narratives, what are the themes we tend to hear in stories about fire?

  Examples:
    - Disaster story → Paradise, CA
    - Firefighter's battlefield → use military tactics to battle the enemy
    - Coming of age story → Young Men and Fire
    - Renewal → fire brings about desired ecological change; what role do people play in this narrative? How widely do you see this narrative shared amongst the public?
- "What society values, it counts." → how do we typically compare "good" vs. "bad" fire? What do we quantify to compare between the two?
- How does the way we identify in fire management affect our actions?
    - Go around the entire group and ask everyone how they relate to fire; what title do they prefer?
    - Ex: firefighter, fire practitioner, prescribed burner, biologist, concerned citizen, community member, student, researcher, rancher
    - What shared term best fits the group as a whole?

Appendix C: Media Training Handout

Contributor: Jenifer Bunty

SBR TREX Media Training Handout

Exercise 1 – Perfect Camera Practice

Work in groups of 2-3 people. Practice delivering your answers to the questions/prompts below while recording:

- What is your name?
- Who do you work for?
- What training are you seeking here? *Avoid acronyms, jargon.
- What do you love about TREX so far?
- Deliver one of the SBR TREX key messages.
  Once you've practiced this, have one of your team members film you. Try to deliver your answers in one take.

Exercise 2 – Story Telling

Tips for Telling a Great Story:

- Make sure it has a beginning, a middle, and an end.
- Be prepared (know your story, but don't memorize it.)
- Talk to your audience like you're talking to "mom."
- Steer clear of rants, and steer back if you find yourself in one.
- Embrace your discomfort.
- Breathe from your stomach (tactical or "box" breathing.)

Plan out and practice your "TREX Story" while recording with your group from Exercise 1

Appendix C: Media Training Handout

Contributor: Jenifer Bunty

Exercise 3 – Identifying Key Messages

Work in groups of no more than 5 people. Identify three key messages based on the scenario below.

Nantapont Gorges State Park (NGSP) is a popular recreation spot for locals and visitors. Popular activities include hiking, horseback riding, camping, and climbing. It is also home to a reservoir that lies within a watershed used by a nearby town. The forests in NGSP are mostly birch, with pockets of oak, larch, and pine as well as an endemic cork. Wildlife resources include *S. scrofa* and multiple deer species that are hunted by locals. NGSP is also home to a charismatic large predator species, the Nantapont Panther. The panther is beloved by locals and has been named the mascot by the local high school. In recent years, the WUI around NGSP has expanded mostly with homes being built by retirees from other states. Some of the new residents view the panther as a threat. You have been enlisted to assist in scouting a burn unit in NGSP. This will be the first planned burn in 50 years. Local fire research shows that the birch trees regenerate well after fire.

While scouting units you come across _____. They are curious what you're doing there. What are your top 3 messages for them?

Local 3rd graders

Local politicians

A Thru-hiker on the famous Nantapont Trail

A local deer hunter

A man in his 50's whose family has used birch to make skateboards for 30 years

A group of fire professionals visiting for a conference

A family of tourists from the other side of the country

2 elderly women wearing binoculars and carrying a Sibley's guide

A high school biology lab field trip

A local university's biology lab field trip

A family that's new to the area

Jen Bunty's mom

A researcher gathering data

A local newscaster

A local police officer

Appendix D: Media Training Presenter Outline

Contributor: Jenifer Bunty

SBR TREX Media Training Timeline Presenter Timeline

Media Ready Intro. (30 minutes)

- Explanation of Room Setup
    - Set up in a circle so that we are communicating face to face (neuro studies say that when we are communicating while someone is beside us or in our periphery, we feel stressed. For evidence, think of any time you got in a fight while driving somewhere with a spouse/partner/family member.)
- General Itinerary for this morning.

Why is Communication Important?

- It helps us do what we do by gaining public support/understanding.
- **Discussion:** What are the challenges to communication here (in this location/culture/situation)? What are the challenges to communication in your area?

View News Videos (20 minutes)

- Discuss good, bad, messages to focus on (What did the news anchors struggle with that we can emphasize next time?) *save tips for after they practice.

Perfect Camera Practice (40 minutes)

- Give name, who you work for, what training in, what you love about TREX so far, practice delivering one of the key points.

Discussion (15 minutes)

- What did you notice once the camera was turned on?
- What lessons did you learn?/ Any tips or methods you figured out as you were filming or giving interviews?

Appendix D: Media Training Presenter Outline

Contributor: Jenifer Bunty

View NBC Fire Tigers Coverage/ Intro to Story Telling (or any example of media coverage of firefighters) (5 minutes w/ brief discussion)

- *https://www.nbcnews.com/nightly-news/video/next-generation-of-firefighters-train-to-take-on-growing-threat-of-wildfires-1338890819854*

Intro to Storytelling (10 minutes)

Think/Discuss – What is your TREX story? (15 minutes)

Mapping out Key Points for a Story (35 minutes)

Discuss Key Points each group came up with (25 minutes)

Appendix E: Chainsaw Parts & Maintenance

Contributor: Jesús Morcillo

Appendix E: Chainsaw Parts & Maintenance

Contributor: Jesús Morcillo

DISPLAY OF CHAINSAW PARTS AND MAINTENANCE. *Pictures*

TREX Activities Workbook Contribution

Jesús Morcillo i Julià

Timing	
15’	Greetings & Introduction
20’	Safety & ergonomic mechanisms
10’	Lessons learned
45’	Engine systems
20’	Cutting body
10’	Questions & closing

Appendix F: 3-Way Medical Training Scenario

Contributor: Kody Wohlers

Images are all from medical scenarios & photo credit goes to Kody Wohlers

Appendix G: Burn Planning Scenario with Briefing

Contributor: Katie Sauerbrey

Ashland TREX 2019 Burn Plan Scenario

Burn Unit: Ashland Mine Underburn Unit 7

Resources Onsite:

- Oregon Woods Type 6 Engine
- JD Forestry Type 6 Engine
- TNC Type 6 Engine
- GFP Type 6 Engine
- USFS Type 6 Engine
- USFS Type 3 Engine
- 20 Person Handcrew (Type 2IA)

Weather Forecast:

Requested Parameters	Remarks
X X X Sky/Weather	Use observations from Siskiyou Mountain portable.
X X X Temperature	
X X X Humidity	
X X X Chance of Wetting Rain	
X X X Lightning Activity Level	
X X X Wind (20 FT)	
X X X Wind (Eye Level)	
X X X Mixing Height	
X X X Transport Winds	

Forecast:

Spot Forecast for Ashland Underburn Unit 7...USFS
National Weather Service Medford OR
501 PM PDT Monday May 20, 2019

Forecast is based on ignition time of 0800 PDT on May 21.
If conditions become unrepresentative...contact the National Weather Service.

.DISCUSSION...A ridge will build over the area Tuesday, but there will still be a slight chance of showers along the coast, in the Umpqua Basin, and over the Cascades. Amounts will be light. High pressure will build in more strongly Friday, but a weak low will develop to the east. This may bring some showers to Lake and Modoc counties, but the remainder of the area will remain dry with highs near or just below normal except for the south coast, which will be very warm. The inland areas will warm up significantly this weekend.

Appendix G: Burn Planning Scenario with Briefing

Contributor: Katie Sauerbrey

Tuesday...
Sky/weather.....Mostly cloudy in the morning then becoming
partly cloudy.
Max temperature.....Around 63.
Min humidity.....38 percent.
Eye level winds.....Northeast 1 to 3 mph becoming northwest winds
1 to 3 mph with gusts to 5 mph in the afternoon.
Wind (20 ft).....Northwest winds 5 to 7 mph.
Mixing height.....2200-3300 ft AGL increasing to 4300-4600 ft AGL
early in the afternoon.
Transport winds.....Northwest around 10 mph.
CWR.....0 percent.
LAL.....1.

Tuesday NIGHT...
Sky/weather.....Partly cloudy.
Min temperature.....Around 39.
Max humidity.....76 percent.
Eye level winds.....North winds 2 to 4 mph with gusts to 6 mph
in the evening decreasing to 1 to 3 mph.
Wind (20 ft).....North winds 5 to 10 mph. Gusts up to 15 mph in
the evening.
Mixing height.....3100-4300 ft AGL decreasing to 1900-2100 ft AGL
late in the evening.
Transport winds.....Northwest around 15 mph.
CWR.....0 percent.
LAL.....1.

Wednesday...
Sky/weather.....Partly cloudy in the morning then clearing.
Max temperature.....Around 66.
Min humidity.....29 percent.
Eye level winds.....North winds 1 to 3 mph becoming northeast winds
2 to 4 mph with gusts to 6 mph in the afternoon.
Wind (20 ft).....North winds 7 to 8 mph.
Mixing height.....2000-3200 ft AGL.
Transport winds.....North around 12 mph.
CWR.....0 percent.
LAL.....1.
$$
Forecaster...NELAIMISCHKIES
Requested by...Rob Marshall
Type of request...PRESCRIBED

Appendix H: Field Leadership Activity Stations

Contributor: Phillip Dye

STATION 1 (SPIDER WEB):

Materials: Web (String), Flagging

Team is in a cave with a giant spider in pursuit of them. Team must safely get all members from one side of web to other side to escape. Team may not go over, under or around web… must go through individual holes. Each hole may only be used one time, and once used, that hole is flagged as unavailable. Team may not at ANYTIME touch ANY PART of the web, or spider will be alerted, and a penalty will be assessed (Dying Cockroach). Instructor stress using people in accordance with their abilities (Respect) and Integrity… if team knows they have touched web… Self-penalty? Teams with 5 members allowed 18 minutes to complete… 6 members allowed 20 minutes.

STATION 2 (TOXIC WASTE):

Materials: 55 gal drum, various lengths of Rope

Drum is filled with highly toxic waste. Team must remove toxic waste from current location to site that will neutralize toxin (high spot), without touching the drum at all. Each team member may only utilize one hand (other hand in pocket), and may only use materials given. If team member uses more than one hand, or touches any portion of drum at any time, that member assessed penalty (dead for 1 minute). Second penalty could be out for remainder of incident? Team allowed 20 minutes.

STATION 3 (MAYOR/FLOOD):

Materials: None

Instructor gives leader initial briefing that they must go to bottom of hill (or other location) and retrieve medical kit (or some other important mission). Instructor follows them en-route to mission. While en-route, instructor advises leader (radios) that the dam has broken, and now in an emergency situation. Team must get back to safety zone (high ground) immediately and take any one they encounter with them to safety. While en-route back, Team encounters Town Mayor (role player), and must convince to come along. Stress decision making, communications and possibly conflict resolution… Mayor should provide some sort of challenge, but not be impossible.

Team allowed 20 minutes to complete task.

Appendix H: Field Leadership Activity Stations

Contributor: Phillip Dye

STATION 4 (SAND TABLE):

Materials: Topo map, field expedient materials

Fire Manager (Instructor) is expecting an incoming Incident Command Team very soon. Provides Leader with Topo Map and instructs leader to have their team quickly make a sand table representation of Topo Map (or section of Topo Map). Team must utilize whatever they can find in the way of props (trash, twigs, shoestrings, etc...) Team should be creative. Fire Manager is quite agitated/stressed and may be short with leader to induce stress factors on Team. Fire manager instructs the leader that he must have this sand table completed in 15 minutes, and at that time, the leader must give the fire manager a complete briefing/familiarization of the sand table, so that the manager can utilize the sand table to brief incoming Incident Command Team. Leaders briefing should include things such as: orientation, legend, scale, and how any unique features on map are represented. Fire manager (Instructor) may frequently call leader for updates or create distractions to add difficulty.

Team will have total of 20 minutes to complete; 15 minutes to build/5 minutes to brief Fire Manager.

STATION 5 (MINE FIELD):

Materials: Boundary 3x10m(string or flagging), mines (helmets), blindfolds

The Teams are confronted with a mine field appx. 3m x 10m. All members must get across the mine field while blindfolded. While blind team member is crossing the minefield, another member of the team must communicate to them the path they must follow. Team leader may choose to send as few as one member, or as many as three members across at one time, but no more than three in the mine field at one time. The more people in the minefield at once, the more complicated communications may become. If at any point, a team member touches an obstacle (mine), they must return to the beginning. The team will have 20 minutes to have each member of their team across the mine field while blindfolded. If a team has less than 6 people, instructor may choose to reduce the amount of time available. Difficulty can also be adjusted by increasing or decreasing the number of mines or changing the pattern.

Appendix H: Field Leadership Activity Stations

Contributor: Phillip Dye

STATION 6 (SNAKE BITE PATIENT):

Materials: None

Team Leader is briefed that there has been a report of a snake bite patient in the general vicinity. A helicopter has been dispatched to the scene. The team must find patient and stabilize/prepare them for medevac. At some point, Instructor informs Leader that there has been some problem with the helicopter, and it is now uncertain when or if it will arrive… "They're still doing everything in their power to get here as fast as possible." At that point, the instructor informs the leader there may be an opportunity to get an ambulance to the nearest road (briefing site?) The idea is to get the leader to decide, while faced with uncertainty. Does he/she wait for a possible helicopter, which would be much faster, or do they decide that waiting would compromise the patient, and begin transport to the road? Difficulty may be adjusted by making patient easy/difficult to locate, combative, panic stricken, etc. If the leader fails to provide a hazard assessment for his/her team prior to commencing search, instructor may drive home the point by creating a second patient from one of the team members… (another snake bite or broken leg, etc..) The team will have 20 minutes to complete the task.

Appendix I: AAR and Briefing Philosophy

Contributor: Ben Wheeler

1. What was planned?
    a) What was the leader's intent?
    b) What information were you provided?
    c) What did you feel was missing?
2. What was the situation?
    a) What did you see?
    b) What were you aware of that you didn't see?
    c) What was simplified? Did we miss something by simplifying?
    d) What fire behavior did the new fire practitioners notice?
    e) What were the weak points (on the line or in the organization)? How were they mitigated?
    f) What the pig picture maintained and if so by whom?
3. What did you do?
    a) Why?
    b) What didn't you do?
    c) What could have been done differently?
4. What did you learn?
    a) What might you do differently next time?
    b) What can we learn as an organization?
    c) At any point was the team stretched? If so how well did they respond and have the ability to bounce back?

- What was the most notable success during the incident that others can learn from?
- What were some of the most difficult challenges faced and how were they overcome?
- What changes, additions, or deletions are recommended?
- What issues were not resolved and need further review or discussion? What is your recommendation?

Appendix J: 14 Leadership Traits

Contributor: Jennifer Mueller

14 Leadership Traits

Justice
1-10:_____

Judgement
1-10:_____

Dependability
1-10:_____

Initiative
1-10:_____

Decisiveness:
1-10:_____

Tact
1-10:_____

Integrity
1-10:_____

Enthusiasm
1-10:_____

Bearing
1-10:_____

Unselfishness
1-10:_____

Courage
1-10:_____

Knowledge
1-10:_____

Loyalty
1-10:_____

Endurance
1-10:_____

Appendix K: Active Bystander Scenarios

Contributor: Tyler Gilbert, Megan Matonis, Kristin Leger

Facilitate the activity by talking about steps to be an active bystander:

Name It

- Articulate what you heard and communicate how it made you feel
- Explain why the behavior was harmful, hurtful, or inappropriate
    - Ex: What you just said/When you said (re-state exactly what they said as word for word as possible) made me feel like you do not respect me, or others like me, or others for these reasons (list reasons)

Claim It

- Establish a clear standard or value related to this type of behavior, and do not deviate from that outlined procedure
- Keep a no-tolerance policy to intolerance- an injustice to some is an injustice to all
    - Ex: Clearly and quickly communicate after the occurrence that the thing that was said is not, and will not, be tolerated

Change It

- Ask for change and be ready to outline how you'd like to see things change
    - Ex: Ask for an apology, and for the individual to refrain from language you found to be inappropriate

Present scenarios below. For each scenario discuss:

- What is happening? Why is this problematic?
- How could you respond to this as an active bystander (witnessed) or as active self (first-hand) with 'Name it, Claim it, Change it'?
- How could active self-help you mitigate this scenario? If a co-worker witnessed this happening to you, how would you like them to respond (refrain or intervene)?

Additional discussion questions, if time:

- Have you ever experienced something like this?
- What kind of practices do we want to institutionalize as an organization to be prepared when this type of incident happens?

Scenarios:

Scenario 1- First-hand experience of sexual harassment

Individual A puts their linegear in the side compartment of a truck, which is parked close to another truck. Individual B, another FFT2 crew member, walks behind Individual A and bumps into them. Individual A is pushed against the side of the truck and they feel Individual B touch their bottom. Individual B says nothing and keeps walking. Individual A feels uncomfortable but can't decide if it was an accident. There isn't a lot of room between the trucks, so Individual A wonders if Individual B didn't mean to touch their bottom. Individual A has not had any similar interactions with Individual B, so Individual A is confused and not sure how to react.

Appendix K: Active Bystander Scenarios

Contributor: Tyler Gilbert, Megan Matonis, Kristin Leger

- What is happening?
    - Individual A feels uncomfortable, though they are not completely sure if they understand what just happened in the same way as Individual B.
- Why is this problematic?
    - Individual A feels violated and wants to say something, but isn't sure if that will make them feel even more unsafe with Individual B.
- How could you respond with 'Name it, Claim it, Change it' (Active Self or Active Bystander)?
- Active *Self* Response (Individual A) : How could you handle this situation if you were Individual A? Discuss this within the "Name it, Claim it, Change it" framework.
- Active *Bystander* Response: How could you handle this situation if you were a crewmember who saw the incident occur? Discuss this within the "Name it, Claim it, Change it" framework.

Note: This type of interaction can happen between anyone, so please use the terms "Individual A" and "Individual B".

Main Take-Away: Your lived experiences may or may not provide you with pertinent context or information. Encourage treating moments of inappropriate behavior as a learning opportunity to either receive or discuss information about how you felt in a situation, and to inquire on what the other individual involved meant by it (and if it was an accident, the individual made to feel unsafe can know this).

Scenario 2- Witnessed experience of verbal harassment

Individual A recounts less than ideal working conditions from a previous crew to Individuals B, C, and D while they ride in a truck together. Individual A finishes their story with "Those crew leaders were awful, all the work we did was so gay and pointless." Unbeknownst to Individual A, Individual B is a gay man who is not yet out to the crew. Individual C thought this was funny and laughed, while Individual D felt incredibly uncomfortable about the entire situation.

- What is happening?
    - Individual A used words affiliated with groups of people to describe a negative situation. Unbeknownst to the rest of the group, one of the crew members belongs to one of those negatively mentioned groups.
- Why is this problematic?
    - Individual A using derogatory terms is an issue on its own, whether the rest of the crew is affiliated with said groups or not. Since Individual B is affiliated with one of the negatively mentioned groups, it is especially directly painful to that individual.
- How could you respond with 'Name it, Claim it, Change it' (Active Self or Active Bystander)?
- Active *Self* (Individual B) Response: Individual A used the word "gay" in a derogatory way while this is Individual B's sexual orientation. Even though Individual A didn't *intend* to offend, disparage, or degrade any of their co-workers, this was the outcome.

Appendix K: Active Bystander Scenarios

Contributor: Tyler Gilbert, Megan Matonis, Kristin Leger

    - How might Individual B choose to speak up regarding their feelings either in the moment with the whole group, or one-on-one with Individual A later? Discuss this within the "Name it, Claim it, Change it" framework. This is Individual B's personal decision to make based on how comfortable and safe they feel.
    - If Individual B decides to speak in that moment, how might they speak up on the issues at hand without identifying anyone as homosexual? Discuss this within the "Name it, Claim it, Change it" framework. For example, Individual B could reply, "*I'm not sure if you meant it this way, but the way you used the word gay was somewhat disrespectful because you're describing a bad situation.* "
- Active *Bystander* (Individual D) Response: Individual D felt uncomfortable after hearing what Individual A said, and although they do not belong to the gay community, they feel strongly that they should speak up to educate Individuals A and C on why their words were inappropriate and potentially harmful.
    - How might Individual D speak up in response to Individual A's comment, whether in the moment or later?
    - If Individual B decides to address the *gay* comment made by Individual A, how may Individual D support Individual B but not talk over Individual B?

Remember, it's important to stay in your lane, especially if your knowledge regarding a sensitive issue isn't strong enough to fully communicate its historical context and overlapping backgrounds. If you can educate others about a topic, do so while recognizing you do not have the experiences of those who belong to the group you're speaking on the behalf of.

Recognize that there is no group of people that exist as a monolith, and new or conflicting information might present itself in these manners. Time allowing, use videos or first-hand accounts from protected groups and discuss the nuances of how words and actions may affect protected groups.

Main Take-Away: Your lived experiences may or may not provide you with pertinent context or information. Encourage treating moments of inappropriate behavior as learning opportunity to either receive or discuss information about what causes unnecessary harm to a community.

Scenario 3- One-on-one conversation with client: A statement directed towards a group that you don't identify with, but was said to you directly

Imagine you are on a crew that has been contracted to burn piles on private property. The crew is made up of people from your organization that you know well and people from a partner organization that you have not yet met. As you wait on site for everyone to show up, you discuss last-minute details with the landowner. An engine from the partner organization pulls up, and a

Appendix K: Active Bystander Scenarios

Contributor: Tyler Gilbert, Megan Matonis, Kristin Leger

Hispanic person gets out and starts gathering their fire gear. The landowner looks at you and says, "I don't want any illegals working on my property." You are taken aback by the comment and unsure how to respond.]

Note: This situation may be difficult to navigate because the landowner is a client and you don't want to offend them, but you know you need to say something.

- What is happening?
  - The landowner assumed the Hispanic person must be an undocumented and illegal immigrant
  - The situation is uncomfortable because you don't want to burn bridges with the landowner, but you also need to address this problematic comment
- Why is this problematic?
  - This is a racist statement. How is it racist? The landowner has assumed that a Hispanic person is a) an illegal immigrant and b) doesn't have appropriate training/qualifications because of their ethnicity.
- How could you respond with 'Name it, Claim it, Change it' (Active Self or Active Bystander)?
  - Name it- what did you hear and why was it problematic
  - Claim it- tell landowner that each person involved with this burn will be treated with respect just like everyone else here to work. You could say things such as "This person has their NWCG quals just like everyone else on the crew " and "Our partner organizations vet their employees and wouldn't hire someone that isn't qualified or is an illegal immigrant ".
  - Change it- explain to landowner how that if a person is Hispanic they need not assume they are illegal or unqualified.

Remember, it's important to stay in your lane, especially if your knowledge regarding a sensitive issue isn't strong enough to fully communicate its historical context and overlapping backgrounds. If you can educate others about a topic, do so while recognizing you do not have the experiences of those who belong to the group you're speaking on the behalf of.

Recognize that there is no group of people that exist as a monolith, and new or conflicting information might present itself in these manners. Time allowing, use videos or first-hand accounts from protected groups and discuss the nuances of how words and actions may affect protected groups.

Main Take-Away: Your lived experiences may or may not provide you with pertinent context or information. Encourage treating moments of inappropriate behavior as learning opportunity to either receive or discuss information about what causes unnecessary harm to a community.

Appendix L: Cultural Resources

Contributors: Tyler Gilbert & Megan Matonis

This is not a comprehensive list of resources; research & contact local tribes in your area

1. Indigenous Peoples Burning Network (IPBN). Includes podcasts, IPBN Reports, case studies, and *Notes from the field* white papers.

2. Northern Rockies Fire Science Network. *Fire & Traditional Knowledge*. Includes podcasts, storymaps, research briefs, publications, video content, webinars, etc. Many authors & contributors.

3. Community Conversations: Applying Traditional Knowledge to Fire Management and Research. Research Brief for Resource Managers. Written by: Frank K. Lake, Vita Wright, Penelope Morgan, Mary McFadzen, Dave McWethy, and Camille Stevens-Rumann.

4. 'Reclaiming The Genius Of Our Ancestors': For These Students, Helping Solve The Future Of Colorado Wildfires Means Studying Indigenous Traditions. Report for Colorado Public Radio News by Jenny Brundin.

5. Ray, L. A., C. A. Kolden, and F. Stuart Chapin III. 2012. A case for developing place-based fire management strategies from traditional ecological knowledge. Ecology and Society 17(3): 37. http://dx.doi.org/10.5751/ES-05070-170337

6. Traditional Ecological Knowledge: A Model for Modern Fire Management? Research Brief written by Gail Wells. Joint Fire Science Program: *Fire Science Digest*. November 2014, Issue 20.

7. Nikolakis, W. D., and E. Roberts. 2020. Indigenous fire management: a conceptual model from literature. Ecology and Society 25(4):11. https://doi.org/10.5751/ES-11945-250411

8. Jackson, B. Traditional Ecological Knowledge and Western Fire Science. Research Overview. 7/30/2010.

9. Fire Facts: People and Fire. Story Map from Northwest Fire Science Consortium. published 08/16/2021.

10. Lake, F.K.; Christianson, A.C. 2019. Indigenous fire stewardship. In: S. L. Manzello, ed. Encyclopedia of Wildfires and Wildland-Urban Interface (WUI) Fires. Cham, Switzerland: Springer, Cham. 9 p.

Appendix M: Individual Personality Exercise

Contributor: Tyler Gilbert

1. Build Identity Map

2. Review Individual Identity Map(s) as a group
   Address differences & similarities within the group(s)
   Time permitting, share inter-group identity map similarities

3. Consider the following discussion questions. Review as many as time allows for:
   - What categories of your personality intersect?
   - What categories of your personality might seem in contrast with one another?
   - How does this affect your place within society?
   - Does these attributes affect your world view? Why or why not?
   - How do these attributes affect your opinions? If they don't interact, why is that?
   - What does it mean to you to be welcoming?
   - In your opinion what does it mean to be for everyone?
   - Do you have what you'd call a "variety" group of people represented in this activity?
   - How could not having a different array of people working on a project hinder its success? Would it affect it at all? Why or why not?

Appendix N: Upper Lyons Prescribed Fire FLA

Contributor: Phillip Dye

Background:

- Event occurred on October 13, 2014 at Redwood National Park.
- Event occurred during the 2014 NorCal TREX.
- Original plan was to burn another unit – last minute change was made to burn Upper Lyons unit resulting in delay and an increased sense of urgency to complete the burn before sunset.
- Integration of TREX participants with NPS resources meant a lot of people were on the burn.
- Piles were placed close to line. Piles had fully cured and burned hotter than expected.
- Firing continued around dog-leg which, combined with burning piles led to rapid increase in fire behavior and shelter deployment.

Challenges:

- Communications: Many participants felt that the one tac channel was not enough, especially with all of the people and when the fire activity increased. In addition, topography prevented some message from being heard.
- Span of Control: Many participants felt that the one tac channel was not enough, especially with all of the people and when the fire activity increased. In addition, topography prevented some message from being heard.
- Identification of Hazards: Many participants felt that the one tac channel was not enough, especially with all of the people and when the fire activity increased. In addition, topography prevented some message from being heard.
- Unit Preparation: At least one fuel specialist commented that piles should have been pulled further into the unit or the fireline should have been created away from the piles.

Review:

- Communications: Does your plan have enough channels if your incident escalates? If you have a medical event? If topography limits communication?
- Span of Control: Does your plan have a clearly defined organizational structure? What if you have more people than called for in the plan?
- Identification of Hazards: Does your plan clearly communicate known or potential hazards? Does your plan identify mitigations necessary to reduce the risk of those hazards?
- Unit Preparation: Does your plan adequately discuss necessary pre-burn preparation? Does your burn prescription contain any consideration for long-term contributing factors such as drought or other environmental factor?

Successes:

- Medical Preparation: Well-designed medical plan which facilitated a smooth evacuation.
- Communication: Many felt that the Burn Boss did a good job in communicating burn objectives which allowed for resources to operate independently while still remaining within leader's intent.
- Briefing: Participants felt that despite the urgency to complete the project, the briefing was thorough and not rushed.

Upper Lyons Prescribed Fire Entrapment and Fire Shelter Deployment Facilitated Learning Analysis

Incident Date
October 13, 2014

1. Summary

Number and Type of Injuries

One individual with second degree burns to the left hand and first degree burns to the right hand and face.

Narrative Summary

On October 13, 2014, firefighters were conducting a prescribed fire in the Bald Hills Area of Redwood National Park.

Crews were burning off of a handline when a combination of factors aligned to cause several spot fires in heavy fuels outside the unit. These spot fires burned together to form multiple slopovers.

A decision was made to suspend ignition until an assessment of the slopovers could be completed. At approximately that same time, a firefighter who was hiking up the fireline became entrapped due to intense heat and dense smoke. As a result, this firefighter deployed their fire shelter on the handline.

The firefighter was quickly located and escorted a short distance out of the smoke and heat. The firefighter, immediately assessed by an onsite paramedic, was able to walk—with some assistance by others—to an area where a vehicle was waiting to transport them to a landing zone.

The firefighter, accompanied by a flight nurse, was airlifted to Shasta Regional Hospital for treatment. The firefighter was released a short time later and referred to the University of California Davis Burn Center for follow-up the next day.

The diagnosis from the specialist at the burn center was second degree burns to the left hand and first degree burns to the right hand and face. Over the next several weeks, the firefighter received follow-up treatment at the burn center.

Significant Note

During the Facilitated Learning Analysis (FLA) process, the firefighter continued to emphasize the profound role that previous fire shelter training played in the successful deployment of the firefighter's shelter during this event.

2. Incident Narrative

Monday, Oct. 13, 2014
0800 Hours

A Mix of Resources
At 0800, prescribed fire personnel and equipment (resources) met at Redwood National Park's South Operations Center in Orick, Calif.

The mix of resources included:

- The local unit federal Service First[1] Interagency National Park Service and U.S. Forest Service personnel;
- Local government and non-governmental personnel, including The Nature Conservancy (TNC) Training Exchange (TREX) representing fire-qualified participants hosted by Redwood National Park. (The TREX program is a collaborative training effort provided through cooperative agreements between The Nature Conservancy, Department of the Interior agencies, and U.S. Forest Service. TREX burn teams are built to be fully qualified and fully functional. They include a range of experience and skills expected to be on an organized prescribed fire module. TNC's Fire Learning Network spearheads TREX events and provides funding and other support across the country. Part of the TREX mission is to serve federal agencies and provide training to federal agency staff.)

Redwood National Park has a successful history of encouraging participation in its prescribed burning program. The TREX program provides participants from both non-governmental agencies (NGOs) and governmental agencies training and experience in planning and implementing prescribed burns. During 2013, TREX was used on multiple prescribed fires in the Park.

Prior to traveling to the burn unit, an organizational briefing for the TREX participants was held at the South Operations Center.

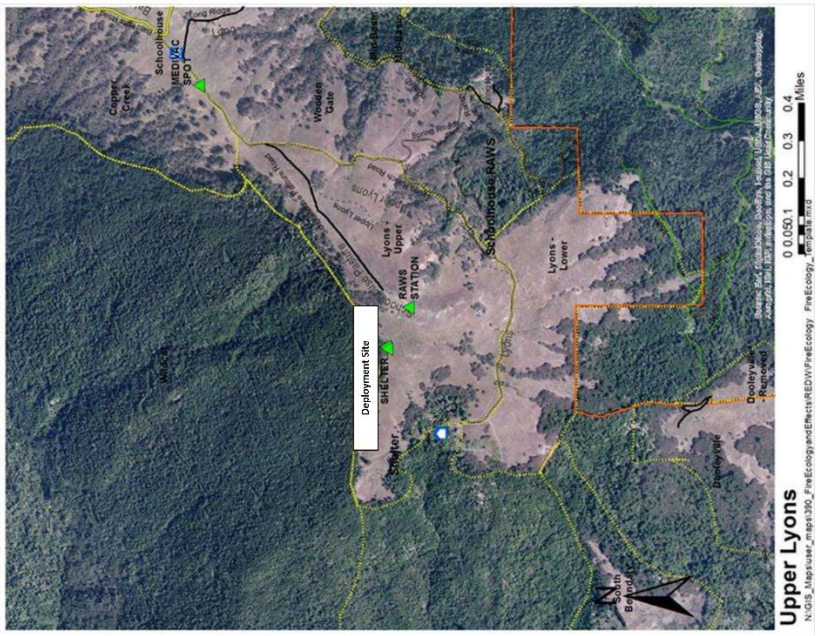
1000 Hours

Decision Made to Burn Another Unit
Resources arrived in the Bald Hills area of the Park at approximately 1000 hours. Dispatch logs recorded that at 1025 the Childs Hill "test fire was not successful". The Burn Boss Trainee noted that 100-hour fuels were "consuming just fine". This consumption would not meet the natural resource and control objectives for the burn. Therefore, Childs Hill was too dry to burn.

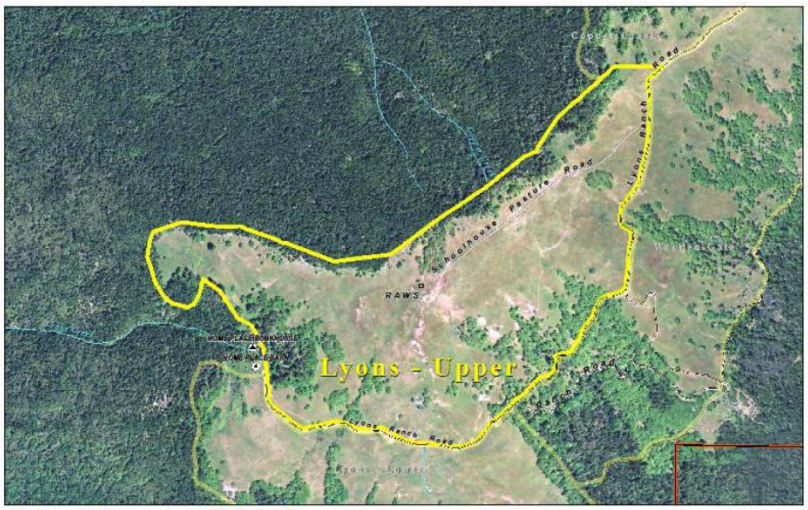
The Burn Boss and Burn Boss Trainee made the decision to move to the Upper Lyons Unit, located approximately one mile up the road. The Upper Lyons Unit met burn plan specifications, was in prescription, and had established fire line. Thus, it was considered available to burn. Additional time was needed to adjust the Incident Action Plan (IAP) and print maps. This resulted in some of the prescribed fire resources having some downtime while they waited.

[Maps of the Upper Lyons Unit are provided on the next two pages.]

[1] "Service First" authorizes four agencies (the Bureau of Land Management, U.S. Forest Service, National Park Service, and U.S. Fish and Wildlife Service) to conduct shared or joint management activities to achieve mutually beneficial resource management goals. The three goals of Service First: (1) improve customer service to the public; (2) increase operational efficiencies among the agencies; and (3) improve land management across the agencies' jurisdictional boundaries. The Service First statute is outlined under Section 422 of the Consolidated Appropriations Act of 2012, Public Law No. 112-74.



Upper Lyons Prescribed Fire – Entrapment and Fire Shelter Deployment FLA 5



Upper Lyons Prescribed Fire – Entrapment and Fire Shelter Deployment FLA 6

1130 Hours

Prescribed fire resources assembled for the Upper Lyons Prescribed Fire at approximately 1130 hours. Maximizing broad interagency training via prescribed fire opportunities has been an ongoing, well-received and productive practice of the Park. At the briefing, everyone could see how many resources were on site, approximately 80 personnel. The Burn Boss Trainee reflected: *"A lot of folks for a briefing. More than you need for 200 acres."*

Operational Briefing

In the briefing, because so many people were on site, the Burn Boss stressed the importance of everyone knowing who they worked for that day. The operational briefing covered burn organization and assignments—which was challenging due the large number of personnel.

At the Operational Briefing, the breakout groups for briefing small groups was initially described as "not going well" and "busy". This resulted in the Burn Boss shifting some people around, which resolved the confusion.

All personnel attended the briefing. From previous experience on prescribed fires on this same unit, "known problem areas" were covered in the briefing, including the challenge of holding a particular dogleg section of line. (This problem area ended up being where the shelter deployment occurred.)

The operational briefing was comprehensive. It highlighted areas of concern throughout the unit, including the potential for increased fire behavior at the dogleg on the unit's north flank. "We could have problems here," the Firing Boss informed. At the briefing the Burn Boss clarified: "I wanted no one ahead of the firing on that part of line." In addition, the Burn Boss said: "No one works on that line unless they go through the chain of command all the way to me."

The firefighter who later deployed felt that the briefing was adequate.

Important Information Not Received in Briefing

Regardless, and for reasons unknown, later that afternoon a TREX squad member would reflect in their unit log: "Module never given a squad briefing".

Furthermore, a Module Leader would later explain: "Listened to the brief of who was doing what . . . I had never seen the area before. I had no idea what it looked like . . ." "After [the shelter deployment], they said they always have problems around this corner and have lost it here before and had holding issues here before. That would have been really helpful to know [before the lighting started].

Communications and other Concerns

Reflecting back on the number of people in the burn organization, the Type 2 Initial Attack Crew Superintendent thought: "If anything, there were too many people."

Communications was an area of concern. The idea of using two tactical (TAC) channels was discussed. However, it was decided that one tactical channel would be used to ensure that **everyone** was hearing and benefiting from the situational awareness that radio traffic provides.

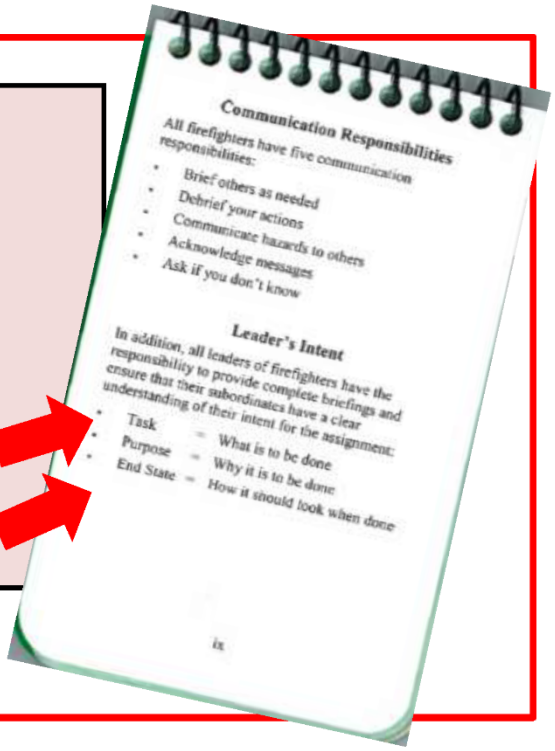
Following the briefing, various informal conversations floated around the briefing area including discussions about the leadership of the TREX participants and their assignment. The TREX Module C Leader noted: "The module had only worked together for two hours . . . I've had this work well before . . . it's been fine."

Lessons Learned

Further reflection by those involved with the Upper Lyons Prescribed Fire yielded this question:

"Was sending and receiving information actually occurring during the operational briefing?"

[Refer to your Incident Response Pocket Guide (IRPG), Page ix: "Communication Responsibilities" and "Leader's Intent"]



On past prescribed fires within the Park, the TREX group members spent a "couple of days" together team building and training, prior to engaging in a training burn. The Burn Boss Trainee on this incident, recognizing that additional time was needed to organize the large number of resources, allowed the Holding Boss (HB) the necessary time to assess needs, coordinate resources, and establish leadership.

Contingency Plan if Squad Boss is Called Away

The TREX Module C Leader, Squad Boss, and Firefighter (a TREX member and U.S. Forest Service employee, who was also qualified to serve as a Squad Boss) had discussed that if the Squad Boss was called away, this Firefighter would assume the role of Squad Boss.

1214 Hours

At 1214 hours, a test fire for the Upper Lyons Prescribed Fire was conducted on the burn's north flank. Criteria for a successful test fire were: "If smoke was pulling back off the line". It was.

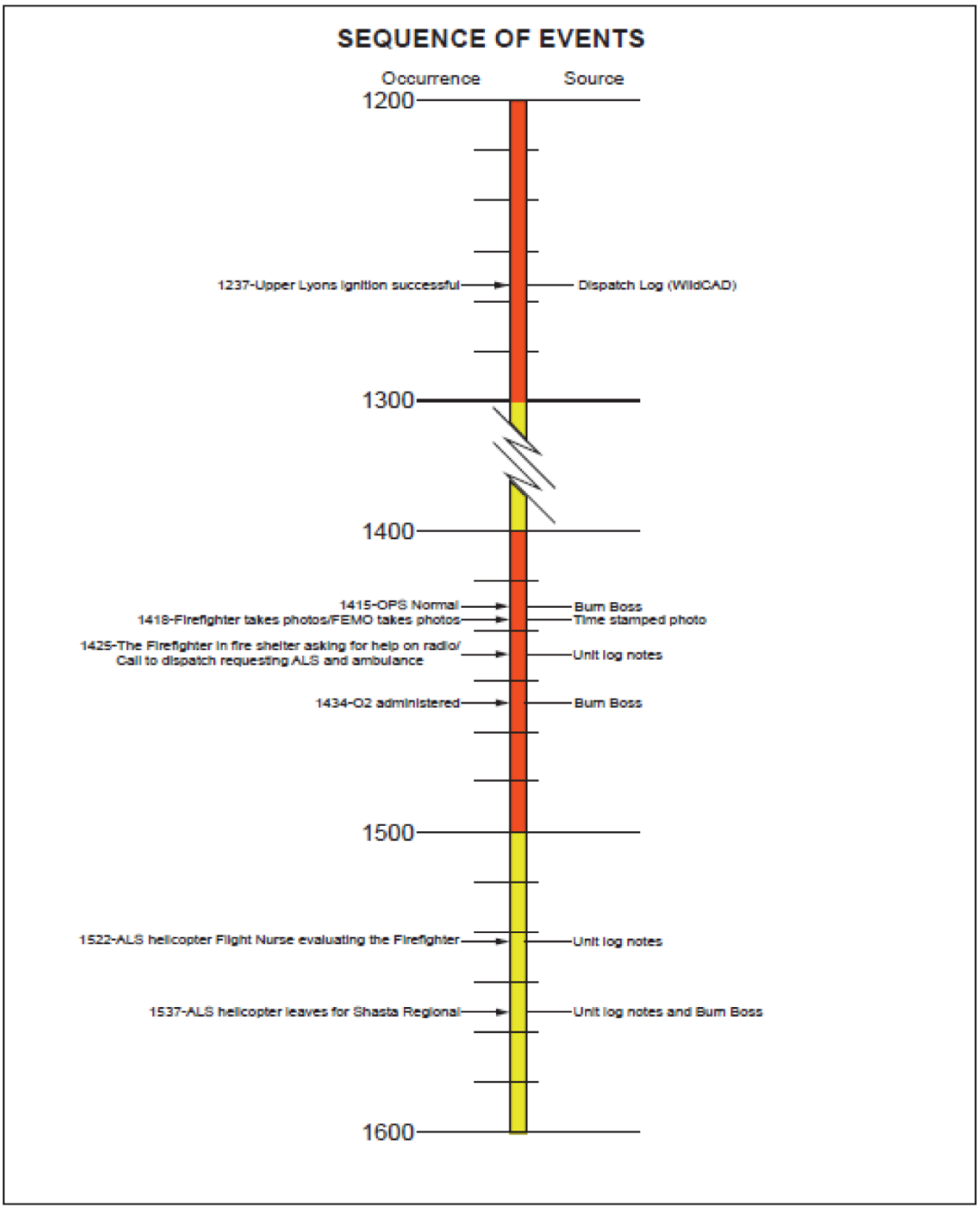
1237 Hours

At 1237 hours, Dispatch was notified that ignitions were successful and that a half-acre test fire had been completed. The objective was to complete a prescribed fire of just over 200 acres.

The Burn Boss Trainee noted that the area had not experienced rain in more than three weeks. "A lot of slash was prepped at the edge of the line. Slash piles were cured and red." The amount of slash along the north flank was a concern.

Slash Accumulations Delay Firing Operation

As firing progressed along the timbered north flank and down the ridge to the Remote Automated Weather Station (RAWS), the Firing Boss started to express concern that the slash was not pulled back far enough from the line. The Burn Boss Trainee said the Firing Boss "was concerned how slash was consuming. For the Park, it was a concern in terms of meeting objectives to retain oaks."


SEQUENCE OF EVENTS
Occurrence
Source
1200
1237-Upper Lyons ignition successful
Dispatch Log (WildCAD)
1300
1400
1415-OPS Normal
Burn Boss
1418-Firefighter takes photos/FEMO takes photos
Time stamped photo
1425-The Firefighter in fire shelter asking for help on radio/ Call to dispatch requesting ALS and ambulance
Unit log notes
1434-O2 administered
Burn Boss
1500
1522-ALS helicopter Flight Nurse evaluating the Firefighter
Unit log notes
1537-ALS helicopter leaves for Shasta Regional
Unit log notes and Burn Boss
1600

"Your pucker factor is going to get high around this corner."

What the Firing Boss told the Firing Boss Trainee as the firing approached the top of the hill near the RAWS station—referring to the burn conditions in the area where the entrapment would eventually occur.

Ahead of the lighters, a squad from TREX Module C was assigned to walk along the north handline and pull apart old piles and jackpots ahead of the firing team. This process of pulling back the slash caused a delay in the firing operation, resulting in the Firing Boss requesting more people to assist with pulling back the slash.

The firing team consisted of three firefighters from a Type 2 IA crew and one TREX participant. The remaining Type 2 IA crew members were assigned to holding along the north flank.

Firefighter Takes on Squad Boss Responsibilities

When the TREX Squad Boss was called back to shuttle water for an engine that was pumping a hose lay on the north flank, the Squad Boss told the Firefighter: "They are all yours." As previously arranged, at this time, the Firefighter began serving as Squad Boss. (For the purposes of this FLA, this person will continue to be referred to as "the Firefighter" in this narrative.)

The Firefighter (now acting Squad Boss) began scouting the north flank looking for more slash piles while the rest of the squad (with the TREX Module C Leader embedded in the squad) continued breaking up these piles and monitoring the north line.

While scouting the north flank looking for more slash piles, the Firefighter began working ahead of the firing operation. Later, during the FLA process, when asked why the Firefighter was not wearing gloves, the Firefighter stated: "I was way ahead of the fire and did not feel that I needed gloves at that time."

Did You Know that THREE Different Glove Options are Available?

Check out "Firefighters' Leather Gloves Redesigned to be More Comfortable" at:

http://www.fs.fed.us/t-d/pubs/htmlpubs/htm09512312/

For more information, see the "Lessons Learned by the FLA Team" section in this FLA.

The Firefighter received a radio call from the Squad Boss instructing him to bring the squad back for assignment to another mission. The Firefighter attempted to relay the message to the TREX Module C Leader to inform him to go ahead and start hiking the squad out and that he would meet them at the engine. However, the Firefighter was apparently unable to make contact.

Photo taken at 1418 hours by the Firefighter who would (eventually) deploy shelter near this area.

As the Firefighter started up the line (up the hill) he passed the burners (lighters). About 50 feet from the closest lighter, the Firefighter noticed an increase in fire behavior and paused to take "a couple of pictures" for documentation (see photo above).

A Change Occurs

The Firefighter recalled: "The smoke was bending across the line." Therefore, the Firefighter "walked about 30 feet into the green and was able to breathe fresh air."

At this time, the Firefighter saw a slopover and called it in. Following this transmission, radio traffic became congested.

TREX Module C Leader recalled: "Communications sucked. You couldn't hear people at the RAWS. And people at the RAWS said they didn't hear the Firefighter."

1419 Hours

Dense Smoke and Multiple Spots Pull Crews Back into Black as a Precaution

By 1419 hours, a combination of factors contributed to dense smoke pushing over the line. Multiple spot fires were being reported on the north flank. At the same time, as fire was being brought down the north flank, the Burn Boss and others near the RAWS noticed it was getting very smoky (see photo on right).

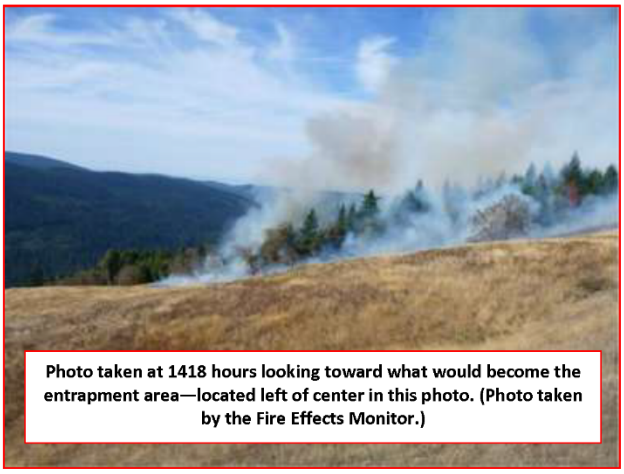


Photo taken at 1418 hours looking toward what would become the entrapment area—located left of center in this photo. (Photo taken by the Fire Effects Monitor.)

The Firing Boss Trainee had the lighters stop ignitions and "cork their torches". The Type 2 IA Crew Superintendent informed the Burn Boss Trainee that the "crew had to pull back" because some of the spots had burned together. Responsible for the safety oversight of the Type 2 IA crew, the Crew Superintendent said: "I grabbed everybody—including my lighters—and moved them into the black."

On the radio, the Burn Boss told "folks to come on out until spots calmed down" and directed workers in the area "to get out". Spot fires became established that created several slopovers.

Likewise, the Type 2 IA Crew Superintendent was not in favor of committing resources to aggressively suppress the slopovers and spots. To do so would not be prudent risk management, the Type 2 IA Superintendent said. "I've been burning in this Park since 2004 . . . I knew we could get them [the slopover and spots] later. There was no sense of urgency to catch them."

The past experience stated by several individuals involved in the Upper Lyons Prescribed Fire was that when burning in this area in the past, grass fire can be run into the hardwoods and conifers to "hold" the fire edge from further progressing.

The Crew Superintendent, overseeing the portion of the crew assigned with holding the fireline stated: "there was intense fire behavior and really thick smoke." The Burn Boss said: "The smoke was mostly from tan oak fuel: heavy, acrid type smoke." Another burn participant observed: "Dudes were really eating smoke on the line, that's for sure." (See photo below.)

Slopovers Force Firefighter to Utilize Escape Route

As previously mentioned, due to the dense smoke blowing across the fireline, the Firefighter walked about 30 feet into the green in an attempt to breathe clean air.

The Burn Boss Trainee stated: "Being caught in smoke like that is like being under water."

The Firefighter saw a slopover above and attempted to notify the Firing Boss Trainee that this slopover was making a push toward the resources above. However, there was too much radio traffic congestion to get through.

The Firefighter stated: "I tried time and time again to get out on the radio but traffic never cleared."

The Firefighter decided to utilize the escape route along the fireline, heading downhill.

When withdrawing, the Firefighter observed another slopover below that was torching trees and making a hard push uphill toward the Firefighter's location.

Photo looking downhill from RAWS station.
(Photo taken by the Fire Effects Monitor.)

Decision Made to Deploy Shelter

The Firefighter ran up the fireline, hoping to get past the tree line, where the Firefighter could make a right-hand turn toward what should have been the black. Instead, the Firefighter encountered heavies burning that resembled a "wall of fire". Next, the Firefighter decided to run down the fireline, but the fire was too intense. The Firefighter recalls: "At that point, I felt like I was being burned alive from all directions—so I decided to deploy my fire shelter." The Firefighter deployed on the four- to five-foot-wide fireline.

The Firefighter experienced some difficulty in getting the shelter to unfold. The Firefighter used the left and right handles to pull apart the accordion folds and shook the shelter four times, but was still unable to shake out the rest of the "long-folds".

The Firefighter then got on the ground, put one knee on the shelter and pried it open the rest of the way, then entered the shelter from a kneeling position and got into a prone position. Once inside the fire shelter, the Firefighter attempted to retrieve the Firefighter's gloves from the left cargo pants pocket, but the Firefighter's left hand felt as if it were on fire (from burns received prior to entering the shelter). The Firefighter decided to cross their arms in front of their chest and tuck their hands into their arm pits.

Equipment recovered from the deployment site indicates that air temperatures outside of the fire shelter were at the upper limits of human survivability. (For more information, see Appendix A.)

Lessons Learned

It can be determined that this fire shelter deployment prevented more serious injuries and saved a life.

[For complete information, see Appendix A: "Upper Lyons Prescribed Fire Entrapment and Fire Shelter Deployment Site and Equipment Analysis".]

What Other Firefighters Experienced

One TREX squad member recorded in their unit log that afternoon that: "Firefighter went down the handline separating from the group . . . Everything seemed calm . . . Wind shifted and it got very smoky. The winds were blowing pretty hard out of the unit into the green. We were getting hit by embers . . . Then we saw fire with high flame lengths below us, 10-feet high."

At this same point in time, another TREX squad member wrote in their unit log: "Firefighter walked ahead of the group to check for remaining burn piles. Winds changed direction and were blowing smoke north over the line . . . Winds picked up even more and blew thicker smoke at us. As we headed downhill in the black we saw the trees in the green ahead of us torch to a canopy fire [individual and perhaps group torching].

A third TREX squad member recorded in their notes: "We reached the edge of the oak stand and did not see any piles nearby. The Firefighter was our lead and

Photo shows the trees torching when the wind shift increased. (Photo taken by the Fire Effects Monitor.)

". . . The fire behavior downslope of us became extreme and the trees started to torch near the line . . . TREX Module C Leader ordered us into the black . . . Two squad members noted embers hitting their necks . . . As trees continued to torch, he ordered us farther into the black. It was incredibly hot, smoky, and the wind pushed smoke into the green."

TREX Squad Member

TREX Module C Leader was behind us. The Firefighter continued downhill [down the line] to scout for other piles . . . Fire behavior hot, torching, and creating a lot of smoke . . . It was difficult to breath and my eyes were crying . . . We went back uphill toward the oaks at this point to escape the thick smoke . . . We were taking a lot of smoke and moved into the green to avoid the smoke. The fire behavior downslope of us became extreme and the trees started to torch near the line . . . TREX Module C Leader ordered us into the black . . . Two squad members noted embers hitting their necks . . . As trees continued to torch, he ordered us farther into the black. It was incredibly hot, smoky, and the wind pushed smoke into the green." (They would later discover that the Firefighter had deployed just downslope from these torching trees.)

1425 Hours

Radio Distress Call: Someone is Surrounded by Fire

On the radio shortly before 1425 hours, several participants heard a distress message on the radio. Someone was saying that they were surrounded by fire—and to stop firing!

At 1425, the distressed voice of the Firefighter was heard by other participants on the radio—when the Firefighter said they were deploying their fire shelter.

Shortly after 1425, the Burn Boss Trainee directed everyone on the radio to stop talking. Over the radio, the Burn Boss Trainee asked if there was an emergency. In a radio transmission, the Firefighter replied: "This is 'the Firefighter'. I'm in my shelter."

The Firing Boss Trainee was momentarily in disbelief at what was just heard on the radio. The Firing Boss Trainee thought: "Someone is really in there and they are melting."

The Burn Boss Trainee remained in radio communication with the Firefighter. At this point, a search for the Firefighter was initiated.

Just after 1425 hours, a search is underway for the Firefighter who has deployed a fire shelter.

For more insights and information on the entrapment and deployment, including photos of the deployment site, see Appendix A.

(Photo taken by TREX participant.)

Even though the smoke was extremely thick—with visibility less than a few feet in some areas—the following nearby resources simultaneously ran to the Firefighter's vicinity: Burn Boss, Firing Boss, Firing Boss Trainee, Fire Effects Monitor (FEMO), and the TREX Module C Leader.

At some point, for approximately one minute, the Firefighter was not responding on the radio. As several others later recalled: "I couldn't hear [the Firefighter]. I thought [the Firefighter] was dead."

The searchers tried yelling. The Burn Boss Trainee asked the Firefighter to yell out so that the searchers could locate the Firefighter. The Firing Boss Trainee stated: "I thought I could hear [the Firefighter]; but I couldn't see through the smoke." The trapped Firefighter stated: "I yelled three times. Thankfully, that was enough to help them locate me."

Photo shows entrapment site. Notice ash on pack, but not on helmet. The Firefighter's helmet fell off as the Firefighter was exiting the fire shelter. (Photo taken by TREX participant.)

The Fire Effects Monitor and Firing Boss were approximately 100 feet uphill from the rest of the searchers when a shift in smoke allowed just enough visibility for them to see the Firefighter's deployed fire shelter.

'We Gotta Go. We Gotta Get Out of Here'

At approximately 1429, the Firing Boss and the Fire Effects Monitor located, lifted up the fire shelter, and confirmed that the Firefighter was inside.

Just prior to arriving at the deployment site, the Firing Boss overheard the Firefighter say: "I am burning."

The Firing Boss now requested that the Firefighter get up, saying: "We gotta go. We gotta get out of here." Once the Firefighter stood up, the Firing Boss attempted to lead the Firefighter from the line to the lighter fuels in the cool black.

However, once again—just as the Firefighter had experienced earlier—after a few steps, this direct route into the black was blocked by overwhelming heat. They backtracked to the fire shelter and picked it up to shield themselves from the heat—and to protect the Firefighter's burned left hand.

The Fire Effects Monitor, who had scouted ahead, motioned to them through a break in the smoke toward a safe route into the cooler black. The Firing Boss was able to lead the Firefighter out to this cool black and out of the smoke. The Firing Boss described the conditions as: "Heavy smoke . . . Hard to see the way out myself. I found myself getting into fight or flight."

One of the TREX squad members described the search scene: "When we arrived [in the search area] the flames were up to 12-feet tall. The fire looked incredibly hot and persisted throughout the search process."

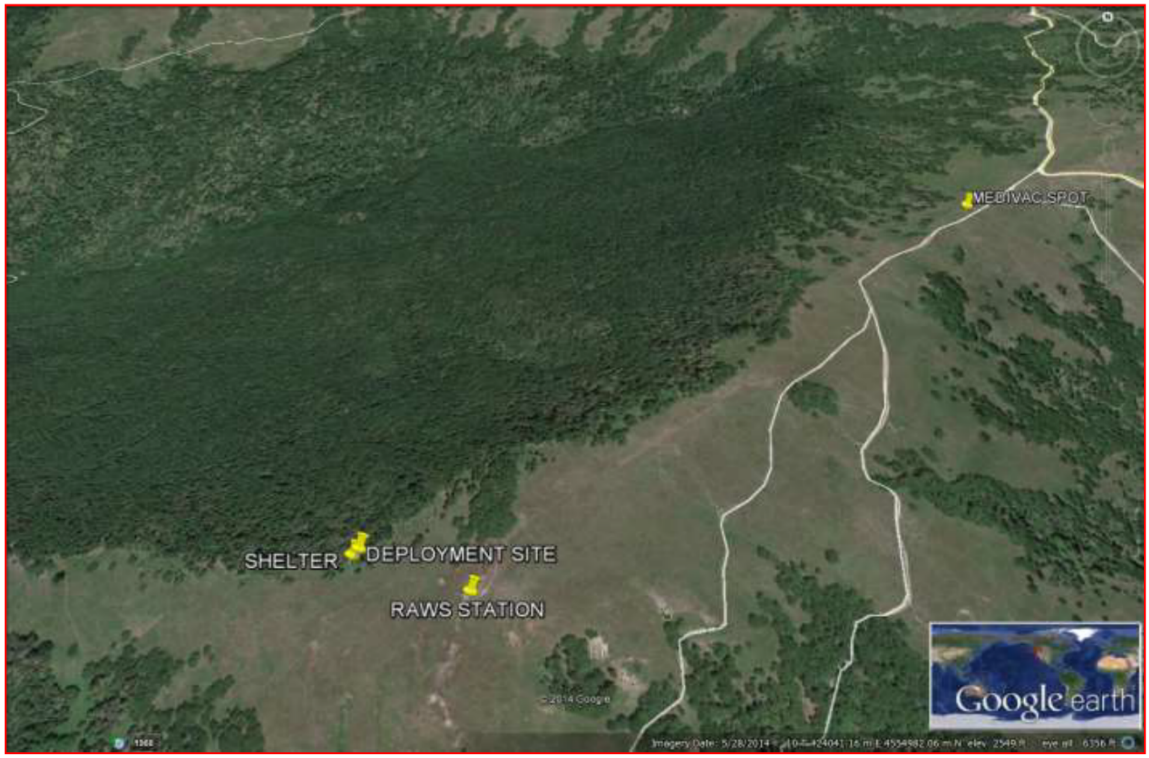
1432 Hours

Medical Plan Well Thought Out, Planned, and Implemented

At this time, the Burn Boss Trainee requested a Ground Ambulance with Advanced Life Support and medivac. The Burn Boss Trainee also provided the coordinates for the Landing Zone. (See image below.)

Once into the cool black, the Firefighter knelt down onto the ground. At approximately 1432, the Firing Boss reported that the Firefighter was outside the shelter and was in stable condition. Shortly thereafter, the Firing Boss Trainee and the Module Leader, who was also a Paramedic, arrived to begin assessing the patient. The Paramedic stated: "I saw main burn on left hand." The patient also indicated to the Paramedic that they had tingling on their right hand and cheek. The Paramedic also stated that "there was coughing and wheezing in [the patient's] lungs." In addition, the Paramedic also described the Firing Boss as "having red cheeks and hands".

The medical plan was well thought out, planned, and implemented. The Firefighter was transported to a medical facility within approximately 30 minutes from being assessed by a Paramedic and received definitive care within 55 minutes (as estimated by the Burn Boss Trainee).



3. Lessons Learned by the Incident Participants

Burn Unit Preparation

"Speaking specifically to preparing a unit, I would pull piles farther into the unit and away from the fire line, or bone pile and burn."

Park Fuels Specialist

Briefings

Always consider: Was sending and receiving of information actually occurring?

From the FLA's Facilitated Dialogue Session

Potential Contributing Factors that Could Impact Your Burn

Take a critical look at the prescription for the unit to be burned. Consider long-term contributing factors such as drought and conditions that can easily change—despite the predicted weather forecast (such as wind).

From the FLA's Facilitated Dialogue Session

Importance of Fire Shelter Training

Fire shelter training played a profound role in the successful deployment on this incident.

Input from the Firefighter who was entrapped and deployed

Medical Plan

"The Medical plan went great. (Unfortunately, we had to use it.)"

Burn Boss Trainee

Personal Protective Equipment

Have and use your PPE. "The Firefighter used the tool that the Firefighter had: Fire Shelter."

Burn Boss Trainee

4. Lessons Learned by the FLA Team

Gloves

In addition to the Firefighter who was not wearing gloves when entrapped, a number of other gloveless individuals appear in various photographs and videos taken during the Upper Lyons Prescribed Fire.

From "Chapter 7: Safety and Risk Management" in the "2014 Interagency Standards for Fire and Aviation Operations (Redbook)": *The goal of the fire safety program is to provide direction and guidance for safe and effective management in all activities."* Under "Personal Protective Equipment": *All personnel are required to use Personal Protective Equipment (PPE) appropriate for their duties and/or as identified in JHAs/RAs. Employees must be trained to use safety equipment effectively. Required Fireline PPE includes: Leather or leather/flame resistant* combination gloves.

It should be noted that a Job Hazard Analysis (JHA) was signed prior to ignition of the Upper Lyons Prescribed burn. The JHA had two sections that referenced wearing gloves, specifically the "protective clothing and equipment" and "holding and mop-up/patrol crews" sections.

From the "*Facilitated Learning Analysis Implementation Guide": "Many risks are ephemeral and emerge from the complex interactions of random or sporadic events. These irregular threats are managed though employee ingenuity with adaption. Essentially, <u>every</u> risk mitigation (every safety precaution) carries some level of "cost" to production or compromise of efficiency. Employees at all levels are continuously—and often subconsciously—estimating, balancing, managing, and accepting these subtle and nuanced tradeoffs between safety and production."*

Wildland firefighter leather work gloves supplied by GSA/Defense Logistics Agency (DLA) (replaced GSA as the provider for many types of wildland fire equipment) and the caches are certified to the National Fire Protection Association (NFPA) 1977 Standard on Protective Clothing and Equipment for Wildland Firefighting. This standard has tests that measure flame resistance, conductive heat resistance, thermal protective performance, cut resistance, puncture resistance, dexterity and grip. Gloves made to this standard attempt to provide a balance among all these requirements. In all likelihood, increasing one characteristic would adversely affect others. For instance, thinner leather would most likely increase comfort, but it would not provide sufficient protection for many of the other aspects of the gloves.

The following are routinely mentioned by firefighters (including members of this FLA Team) as reasons why safety conscious firefighters, at times, remove their gloves in the work environment: comfort, fit, blisters to the hands caused by thick interior folds in flexed gloves, fine motor skill dexterity, avoidance of embers becoming lodged in the cuffs of gloves, as well as other general work considerations.

While gloves can obviously provide protection of skin from exposure to heat, it is a commonly accepted practice for wildland firefighters during mop-up to remove their gloves and "feel" for heat with the backs of their hands. For various other reasons, experienced and well-trained firefighters, at times, also make reasoned decisions to not wear their gloves.

<u>Discussion</u>

The FLA team suggests the evaluation of use of different types of gloves or hand protection systems/processes to address the variable work environment firefighters face in a manner that concurrently provides for worst case protection, and for more common work realities.

Encouragement of having a wildland fire "learning culture" has tangible positive outcomes on safety and work productivity. For example, past lessons learned resulted in changing vehicle seatbelt types in some

type of vehicles to address reasons that firefighters were making reasoned decisions not to wear automatically tightening seatbelts. That change resulted in increased seatbelt use and potentially reduced severity of injuries when unexpected accidents occur.

In 2009, the Missoula Technology and Development Center (MTDC) published the results of a nationwide product review (Smith, John R. 2009. *Firefighters' Leather Gloves Redesigned To Be More Comfortable*. 0951 2312P. Missoula, MT: U.S. Department of Agriculture, Forest Service, Missoula Technology and Development Center. 4 p. Available at: http://www.fs.fed.us/t-d/pubs/htmlpubs/htm09512312/). This review evaluated the fit, comfort, and utility of the standard heavy-duty gloves available through the General Services Administration's (GSA) Wildland Fire Equipment Catalog.

As part of that 2009 effort, comments from almost 2,000 wildland firefighters indicated that the existing gloves needed to be more comfortable, although the firefighters said the gloves provided acceptable levels of protection and durability.

Feedback from Firefighters
Based on this feedback from firefighters, MTDC worked with the manufacturer of the existing gloves to increase comfort while maintaining protection and durability.

Three modifications of the existing gloves were developed and field tested. As a result, more glove options became available for wildland firefighters.

These glove options are now available from the Defense Logistics Agency (DLA) (replaced GSA as the provider for many types of wildland fire equipment) at: https://dod.emall.dla.mil/acct/. (For further reference, see GSA Advantage at: https://www.gsaadvantage.gov/advantage/s/search.do?db=0&q=0:2firefighting+gloves&searchType=0&p=2.)

Glove Options
In 2014 these glove options include:

The now standard "Firefighter Work Gloves" are stocked in all of the National Interagency Support Caches and are also available from DLA. The national stock numbers (NSNs) (NFES numbers also provided) for these gloves:

'Firefighter Work Gloves (rough out)'

X-small, NSN 8415-01-394-0208, NFES 1293

Small, NSN 8415-01-394-0209, NFES 1294

Medium, NSN 8415-01-394-0210, NFES 1295

Large, NSN 8415-01-394-0215, NFES 1296

X-large, NSN 8415-01-397-3937, NFES 1297

(2014 prices for all $14.18 per pair)

[More glove options on next page.]

Other NFPA compliant gloves available from DLA (although not stocked by all of the National Interagency Support Caches). Their national stock numbers (NSNs) (NFES numbers also provided):

'Brushed pigskin with elastic wrist shirring'
(Also stocked in 2014 by the Coeur D'Alene (CDK) and Southern California (LSK) Incident Support Caches)
X-small, NSN 8415-01-565-0623, NFES 1639
Small, NSN 8415-01-565-0620, NFES 1640
Medium, NSN 8415-01-565-0618, NFES 1641
Large, NSN 8415-01-565-0624, NFES 1642
X-large, NSN 8415-01-565-0625, NFES 1643
(2014 prices for all $19.08 per pair)

'Split cowhide with elastic Kevlar knit wristlet'
(Also stocked in 2014 by the Coeur D'Alene Incident Support Cache (CDK))
X-small, NSN 8415-01-568-0011, NFES 1474
Small, NSN 8415-01-568-0006, NFES 1475
Medium, NSN 8415-01-568-0013, NFES 1476
Large, NSN 8415-01-568-0008, NFES 1477
X-large, NSN 8415-01-568-0012, NFES 1478
(2014 prices vary and are just over $26 per pair)

Whether firefighters and managers are widely aware of all of these glove options to address fit and comfort issues is unknown.

5. Recommendations

1. Gloves

Based on the Lessons Learned by the FLA Team, the following recommendations are suggested regarding gloves:

A. **Further action should be taken nationally to ensure broader awareness of alternative glove options by wildland firefighters and managers. In addition, supervisors need to lead by example and ensure that firefighters are wearing gloves at the appropriate times.**

B. **The National Fire Equipment System (NFES) Committee and the NFES National Interagency Support Caches (NISC) should consider expanding the stocking of all three glove types by all of the Interagency Support Caches.**

C. **Further evaluation should be done to assess the different types of gloves or hand protection systems/processes to address the variable work environments that firefighters face in a manner that concurrently provides for worst case protection and more common work realities.**

2. Minimizing Fire Shelter Surprises

It is important for firefighters to remember their training and to try to remain as calm as possible during an entrapment situation. Training which maximizes realistic conditions and draws upon actual emergency fire shelter deployment scenarios can reduce "surprises", help firefighters remain focused on implementing their training rather than becoming distracted by unexpected developments, and, thereby, help firefighters remain as calm as possible in the otherwise severely adverse conditions.

During this incident, the Firefighter experienced that the long-folds in the fire shelter did not "shake out" as they do with practice shelters. In turn, the Firefighter immediately developed a manner to successfully address this situation. At the same time, there were specific aspects of fire shelter training that the Firefighter recalled that helped the Firefighter remain calm by recognizing "normal" conditions—such as light entering the fire shelter. (For more specific details, see Appendix A.)

Recommendations

Based on the Lessons Learned by the FLA Team on this incident, as well as descriptions in several recent FLAs regarding firefighters being surprised by circumstances that occurred when they deployed their fire shelters in actual entrapment incidents, this FLA Team recommends:

As fire shelter training curricula is updated, it should reflect lessons learned relative to equipment as documented in the many FLAs available at this time.

Incorporating actual unanticipated experiences with fire shelters encountered on actual emergency fire shelter deployments—as well as the ways in which firefighters overcame these "surprises"—can benefit firefighters who may encounter similar situations.

In addition, as described in Appendix A, this FLA Team recommends:

When training for fire shelter deployments, a variety of training scenarios can be used to make training more realistic; for example, using actual fire shelters that are taken out of service for training purposes.

6. FLA Team

Rob Griffith, FLA Team Leader
Assistant Director
Pacific Southwest Region, Fire and Aviation Management Staff
U.S. Forest Service

Godot Apuzzo
Equipment Specialist
National Technology and Development Program,
Missoula Technology and Development Center
U.S. Forest Service

Deron Mills
Deputy Fire Chief – Operations
Yosemite National Park
National Park Service

Jamie Tripp-Kralman
Regional Fuels Operations Specialist
Pacific Southwest Region, Fire and Aviation Management Staff
U.S. Forest Service

Paul Keller
Writer Editor
Wildland Fire Lessons Learned Center

The FLA Team would like to thank George Toyama, Visual Information Specialist at the San Dimas Technology and Development Center, for his assistance in developing this Facilitated Learning Analysis report.

7. Appendix A – Upper Lyons Prescribed Fire Entrapment and Fire Shelter Deployment Site Analysis and Equipment Report

The following discussion is derived from a site visit, inspection of personal protective equipment (PPE), and interviews with the Firefighter who deployed the fire shelter. The site visit was conducted on October 17, 2014; four days after the fire shelter deployment. In the time between the shelter deployment and site visit, the area received rain and wind.

The Firefighter received second-degree burns on the back of the left hand and first-degree burns on the left side of the face, and on the knuckles and fingertips of the right hand. The Firefighter did not wear gloves during fire operations and received these burns while attempting to escape the fire. The Firefighter stated that once inside the shelter, the burns were too painful to put on gloves.

The Firefighter stated that several attempts were made to use escape routes. The first attempt to escape entailed going down the fireline and out to the "black," but the fire behavior was too intense. The Firefighter also tried to escape by going up the fireline, but was prevented by a "wall of fire" from a heavy fuel concentration. The Firefighter started to "feel pain on the left, right, and all around" and tried to escape into the "green," but the smoke and vegetation were too thick (Figure 1). The Firefighter became entrapped and chose to deploy the fire shelter on the four- to five-foot fireline on the north-northwest flank of the Upper Lyons Prescribed Burn.

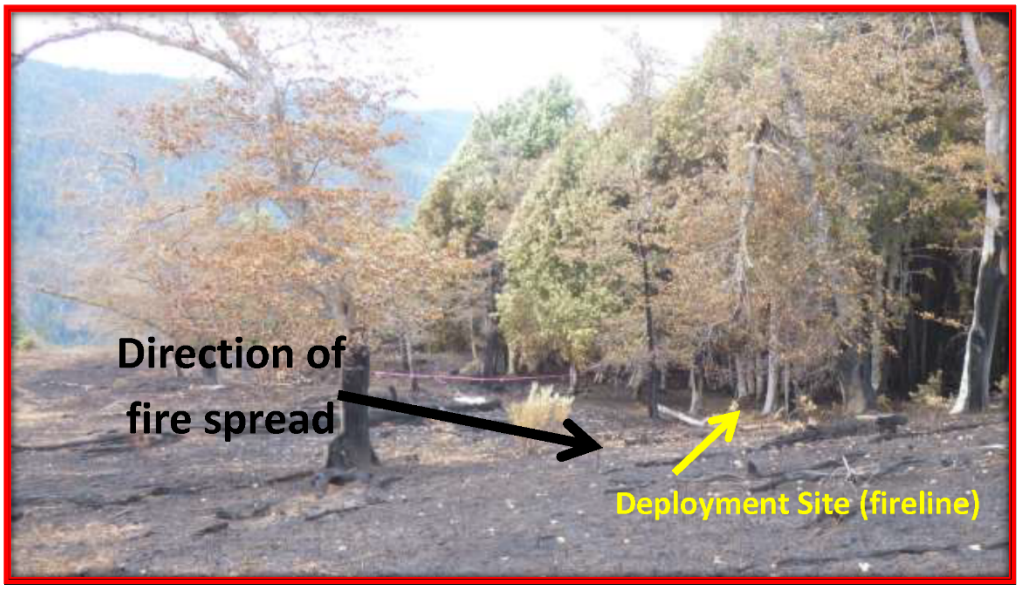


Figure 1 – Fire shelter deployment site.

Site Description – The deployment site was located on the edge of mixed conifer/oak canopy and prairie/grassland. The site was adjacent to jackpots of slash containing heavier 100- and 1000-hour fuels.

The summary of fire behavior compiled by the Fire Effects Monitor (FEMO) estimated consistent flame lengths of two to three feet in the oak understory and two to six feet in the open grass. FEMO estimated flame lengths at five to 15 feet in areas of red slash, resulting in tree torching and canopy scorch.

Figure 2 – The deployment site along the fireline. The "X" indicates the location at which the Firefighter deployed the fire shelter. (Note: The log fell across the line after the fire.)

Deployment Sequence – The deployment sequence is listed below in the chronological order of events.

Deployment Site Preparation – The Firefighter remembered "dig to dirt" from fire shelter training. The fireline was four to five feet wide and had previously been scraped to mineral soil (Figure 2). The Firefighter determined that this site required minimal preparation and deployed the fire shelter on the fireline.

Removal of the Fire Shelter from the Fireline Pack – The fire shelter was stowed in the sleeve on the bottom of the Firefighter's fireline pack. The Firefighter removed the shelter while wearing the fireline pack. The Firefighter took off the fireline pack, dropped the pack to the ground, and took a few steps uphill to deploy the fire shelter. The Firefighter mentioned no problems with the removal of the shelter from the fireline pack.

Opening the Fire Shelter Polyvinyl Chloride (PVC) Bag – The Firefighter stated that the red pull-ring and PVC bag opened and performed as designed.

Fire Shelter Deployment – The Firefighter grabbed the left and right fire shelter handles and pulled apart the accordion folds, then shook the shelter four times to unfold the long-folds. However, these folds felt "stuck together". The Firefighter dropped to the ground and put one knee on the partially deployed shelter and pried open the long-folds of the shelter by hand. The Firefighter maneuvered from one knee to a sitting position before rolling into the fire shelter, got into a prone position, and stuffed each hand into the opposite armpit to protect them (Figure 3).

Inside the Fire Shelter – The Firefighter stated that the inside of the shelter became smoky, apparently from firebrands trapped under the shelter during deployment. The Firefighter "thought I was going to suffocate." The Firefighter therefore dug a two-inch deep breathing hole by hand which "made a big difference for air quality." The Firefighter noticed "light holes" along the fire shelter's sewn seams and thought they were normal from a fire shelter training video that the Firefighter remembered watching. The firefighter, even without gloves, held down the shelter with body, elbows, and feet.

Fire Shelter and PPE Inspections – The used fire shelter and PPE worn during the deployment were collected and their conditions were analyzed.

Summary of the Firefighter's equipment:

Materials—Conditions and Corresponding Temperatures

Material and Characteristic	Temperature (°F)
Skin: Second-degree blister	131
Human survivability: Air temperature	300
Nylon: Melt	500
Fire shelter PVC bag: Melt	280
Fire shelter HDPE plastic liner: Melt	270

Figure 3 – The Firefighter's position inside the fire shelter.

Equipment Recovered – Items recovered were: a fire shelter, fireline pack and steel water bottles, high-density polyethylene (HDPE) fire shelter plastic liner, handtool (Rogue Hoe) with fiberglass handle, fire shelter polyvinyl chloride (PVC) bag, fire shelter PVC bag red pull ring, and firefighter helmet.

The outside of the fire shelter had areas of brown residue, most likely from firebrands. The red pull ring was partially consumed and appears to have contacted burning surface fuels. The fireline (nylon) pack had a one-inch melt hole from a hot ember. The fire shelter PVC bag had two one-inch melt holes and a two-inch long melt along the edge of the bag. The HDPE plastic liner was partially melted and deformed from radiant heat.

Figure 4 – Fire shelter from the Upper Lyons Prescribed Fire deployment.

Fire Shelter Analysis – New Generation Fire Shelter, M-2002, Forest Service Specification 5100-606 (Figure 4).

PPE Items

Fire shelter manufacture date and size: 12/2009, large size.

- **Condition:** No visual indications of exposure to high temperatures.
- **Outer shell:** Minimal (less than one percent) physical abrasion and delamination from wear and tear along fold lines.
- **Inner shell:** Nothing to note.
- **Floor:** Six-inch tear on end-cap; one-inch hole on opposite end-cap.
- **Seams:** Nothing to note.
- **Hold-down straps:** Nothing to note.

Figure 5 – Fire shelter pull-strip and PVC bag.

Fire shelter pull-strip and PVC bag: The PVC bag had two burn holes. These were most likely from firebrands. The pull-strip was partially consumed by the fire (Figure 5).

Fire shelter HDPE plastic liner: The liner was partially melted on the exposed edges (Figure 6).

Helmet: Bullard Wildfire Series, FH911H, certified to National Fire Protection Association (NFPA) 1977, manufactured 03/2012. No visual indications of exposure to high temperatures.

Flame-resistant shirt: Forest Service Specification 5100-91H, manufactured 04/2010. No visual indications of exposure to high temperatures.

Flame-resistant pants: Forest Service Specification 5100-92M, manufactured 02/2013. No visual indications of exposure to high temperatures.

Figure 6 – Fire shelter high-density polyethylene plastic liner.

Summary of Upper Lyons Prescribed Fire Entrapment/Fire Shelter Deployment

The Firefighter received burns to the hands and face that required hospitalization. The Firefighter received these burns while trying to escape.

The Firefighter deployed the fire shelter after entrapment when escape was no longer an option. The Firefighter remained inside the shelter from four to five minutes. The Firefighter stated that it was hot inside the shelter, but "it provided a lot of protection" and "I was glad I had it." The Firefighter (6'4", 310 lbs.) stated that the shelter was "roomy". The Firefighter also stated that once the shelter was opened, "it was easier to get into than a practice shelter, not as loose."

Analysis of the equipment in and around the deployment site indicates radiant heat exposure high enough to melt plastic and nylon materials. These temperatures are at the upper limits of human survivability. It can be determined that this fire shelter deployment prevented more serious injuries and saved a life.

Important Reminders

It is important for firefighters to remember their training and to try to remain as calm as possible during an entrapment situation. This Firefighter experienced issues with the shelter not encountered during training—the folds didn't shake out as they do with the practice shelter.

When training for fire shelter deployments, try different training scenarios to make training more realistic. Fire shelters that are taken out of service should be used for training purposes. Firefighters should practice shelter deployments while wearing PPE in a high-stress environment with time constraints and in different positions (standing, kneeling, and lying). Adding high ventilation fans for wind also helps create more realistic training.

Even though it is more comfortable to not wear gloves during fire operations, the need for hand protection can suddenly and unexpectedly arise. Gloves should be worn during fire operations except when fine motor skills are needed.

Appendix O: Medical Training Scenario

Contributors: Jennifer Mueller & Leah Mathys

Scene (Read aloud to participants)

It is towards the end of TREX; your mod is wrapping up a 150A burn in steep terrain, and your crew is transitioning into monitoring. Time is 1700 and weather is as you are experiencing it currently. One of your crew members fails to return radio traffic, and you go to investigate. You find your fellow crewmember sitting under a tree.

Patient programming (Delegate someone to program patients while the scene is read aloud to participants)

- **Situation:** You are found sitting under a tree, helmet off, feeling very poorly.
- **Chief complaint:** Bad headache, and you can't remember what happened.
- **LOR:** You know your name and location of where you are, which is part of your TREX. You are unsure of the time of day, and the events leading up to the current moment.
- **SAMPLE History**:
    - You ate breakfast with a lot of coffee, a small lunch and very little water
    - Your sleep has been poor the last week and you feel weak and tired
        - If they ask you to walk, you become very dizzy, nauseated, and don't think you can stand
    - No allergies and you are currently taking a prescription for anxiety, which you took this AM as per normal
- **Vital signs:** *(Consider writing vital signs on a notecard for patients; patients should allow Care Provider to take Initial vital signs **before** giving changes)*

Initial:	***After 10 mins:***	***After 20 mins:***
Heart Rate: +24bpm; strong/regular	Heart Rate: +32bpm; weak	Heart Rate: +32bpm; weak
Respiratory Rate: +10; unlabored	Respiratory Rate: +10; unlabored	Respiratory Rate: +10; unlabored
Skin: Pale, cool, clammy	Skin: Pale cool, clammy	Skin: Pale, cool, clammy
Pupils: PERRL	Pupils: PERRL	Pupils: PERRL

- **Changes:**
  As the care provider starts to ask more questions, you become slightly irritated, and your headache gets worse (8/10)
  You do not have any other notable pain or symptoms