INITIAL ATTACK EXERCISE:
RESPONDER MANUAL

Background

It is 1600 hours (4:00 pm) on August 28th. You are the Engine Captain for Type 3 Engine 344. Your station also houses the Type 1 hand crew, Crew 4. You and your engine members have spent the day inventorying equipment, rehabbing the engine and are starting to close up shop. Crew 4 is just returning from field work, thinning the fuel along Sawyers Bar Road; they left at 1900 hours (7:00 am).

A call comes over the radio, reporting smoke just southwest of Tanner's Peak. This is right above your station.You can see a faint sign of black billowing smoke north of the station.

You run outside. You can see a faint sign of black billowing smoke north of the station (initiate smoke emitter). It seems it could be accessible from the station's P.T hike. The trail is an old, shaded fuel break that was originally put in by a dozer, it has not been well maintained. It's steep, rocky and reaches the ridgeline, but only accessible through foot.

Dispatch has assigned Engine 344, Engine 220, Crew 4, Crew 3, and Heli tack crew 503 to respond.

YOUR ROLE:

Assume the role of Incident Commander (IC), and employ the best practices for mitigating the impacts of this incident with the information provided above.

INITIAL ATTACK EXERCISE:
FACILITATOR MANUAL

Target Audience:

Firefighter 2, Firefighter 1, Incident Commander type 5 trainees, Incident Commander type 5

Training Objective:
In this scenario, participants will be tasked with implementing a plan of action, assessing and communicating hazards on the landscape and coordinating resources. The goal is to utilize and verbally communicate with resources in a safe and effective manner.

Resources Referenced:

Type 2 Hand Crew (Crew 3)
Type 1 Hand Crew (Crew 4)
Type 3 Engine (Engine 334)
Type 3 Engine (Engine 220)
1 Large Air Tanker (T-01)
Helitack Crew (Helitack 502)

Facilitator Briefing

1. Verbalize to Responder Participant(s):
   It is 1600 hours (4:00 pm) on August 28th. You are the Engine Captain for Type 3 Engine 334. Your station also houses the Type 1 hand crew, Crew 4. You and your engine members have spent the day inventorying equipment, rehabbing the engine and are starting to close up shop. Crew 4 is just returning from field work, thinning the fuel along Sawyers Bar Road; they left at 1900 hours (7:00 am).

   A call comes over the radio, reporting smoke just southwest of Tanner's Peak. This is right above your station.You can see a faint sign of black billowing smoke north of the station.

   You run outside. You can see a faint sign of black billowing smoke north of the station. It seems it could be accessible from the station's P.T hike. The trail is an old shaded fuel break, it has not been well maintained. It's steep, rocky and reaches the ridgeline, but only accessible through foot.

   Dispatch has assigned Engine 334, Engine 220, Crew 4, Crew 3, and Helitack Crew 503 to respond. You are to assume the role of Incident Commander (IC), and employ the best practices for mitigating the impacts of this incident with the information provided.

2. Briefing Period (5 minutes): At this point, the facilitator should ask if the participants have any questions before starting the scenario (see resource table if needed). Allow 5 minutes for questions and planning.
3. Begin Simulation by initiating a fire and a smoke emitter on top anywhere on the map, (preferably near Tanner's Gulch)

<u>INITIAL ATTACK EXERCISE</u>:
FACILITATOR MANUAL

Events

These are predetermined events that will happen during the scenario, this information should NOT be given out at the beginning of the game unless SPECIFICALLY ASKED FROM THE IC PARTICIPANT DURING BRIEFING PERIOD. Instead these events should be vocalized from the facilitator when they happen**.**

- Helitack and Air Tanker cannot fly after 1900 (7:00pm)
- Strong wind shift at 1730 (5:30pm): NE 15 mph

Facilitator "Murphy's Law" Suggestions

The "Murphy's Law" suggestions listed below can be added as "events" at any time during the scenario to raise the stress level of the leader. You can also use one of your own.

- Member of crew 4 trips and is injured, needs to be extracted from the hill
- Engine 220 arrives on scene, but their water tank is empty.

Notes for the Facilitator:

1. Familiarize yourself with the operations stated in the "Initial Attack Exercise Setup"

2. Strongly discourage pointing to areas on the sim table when players are communicating. A focus of this exercise is to practice verbal communication and simulate the inability to use physical gestures when communicating over radio.

3. Be aware of simulation speed. To mimic real life response accuracy the speed should be set anywhere from 1x to x64 to ensure adequate time for the participant to make response decisions.

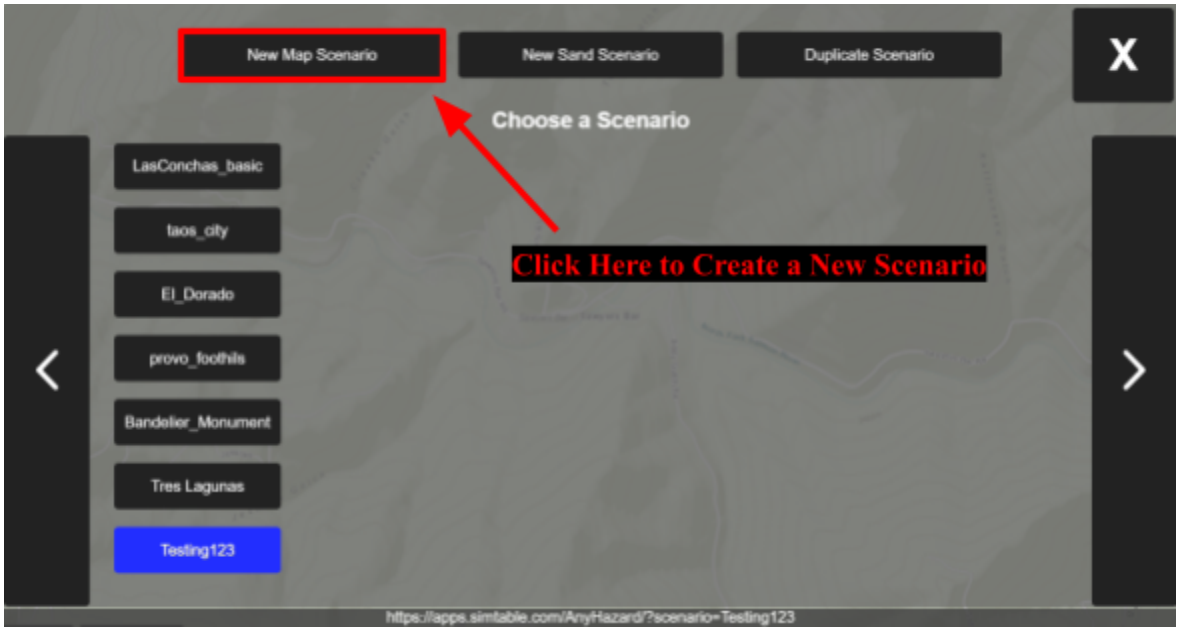
4. For inexperienced participants, pause freely to allow adequate time to process and make decisions. While this is a training exercise designed to simulate decision-making under stress, it's crucial to consider your audience to ensure they gain the most from the experience.

Resources					
	Any Hazard Button	Prod. Rate	Line Stability	Retrun Time (mins)	Arrival time (mins)
Crew 3	Crew 2	90%	Low	/	50
Crew 4	Crew 1	80%	High	/	On scene
Engine 334	Engine 1	100%	High	/	On scene
Engine 220	Engine 1	100%	Med	/	50
Tanker T-01	Tanker 1	/	Med	40	40
Helitack 502	Heli 1	/	Med	30	30

SimTable: Initial Attack Exercise Setup

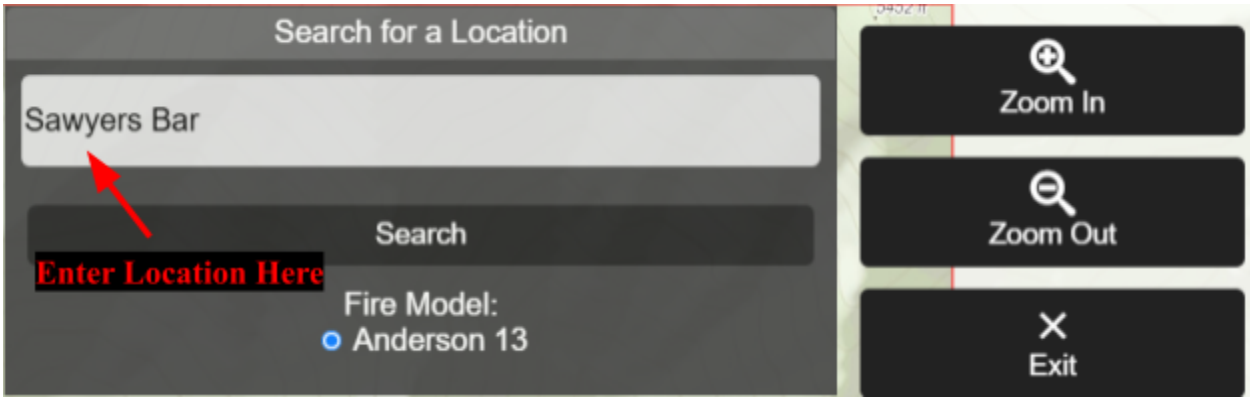
Chapter 1: Starting a New Scenario

1. Creating a Scenario:



2. Set Location:

a. Search for Sawyers Bar, CA on the search tab in the top right corner

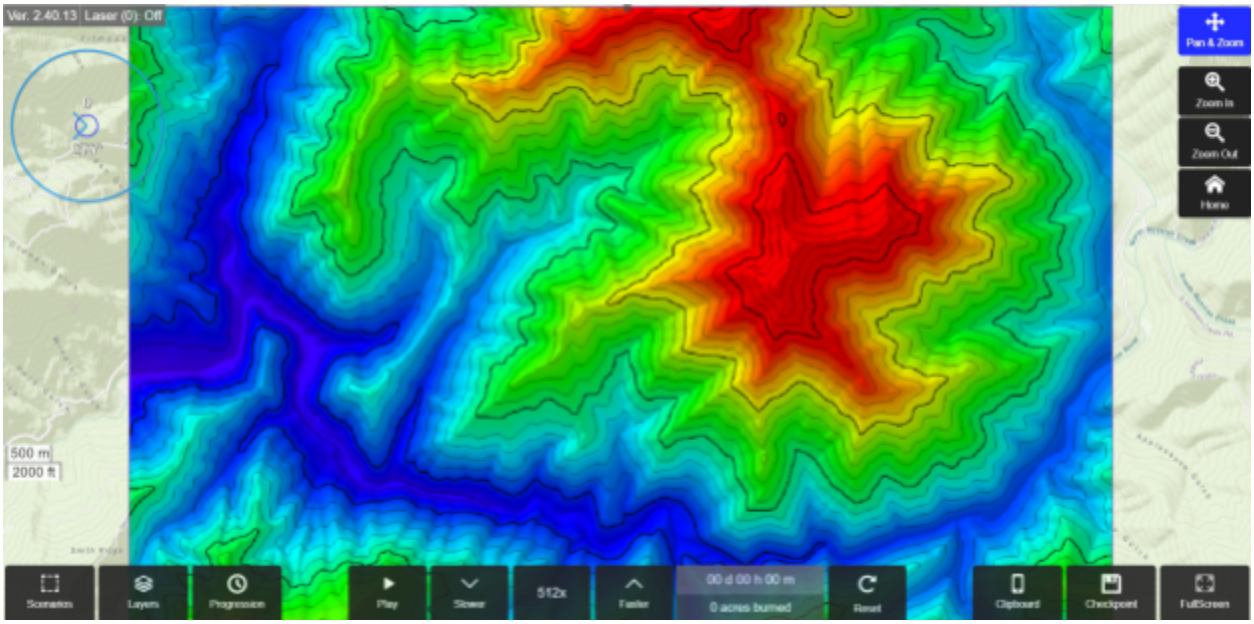


b. Position the map so that Sawyers Bar is located towards the bottom center of the screen. This should result in Tanners Peak on the northeast section of the map. Ensure that Sawyers Bar Road is visible and travels along the bottom of the map.

NOTE: The preferred zoom for this scenario should be between 1000ft – 2000ft

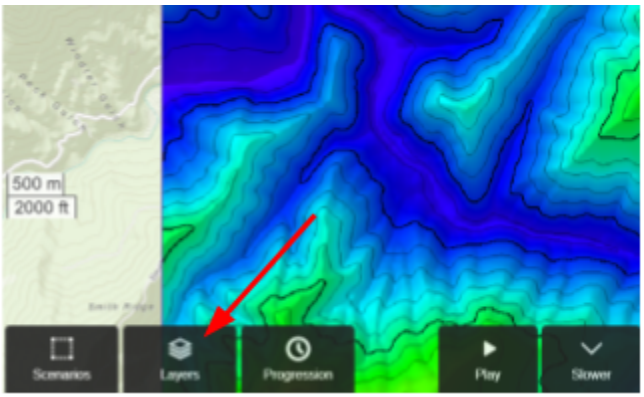
c. Create a title for the scenario and save.

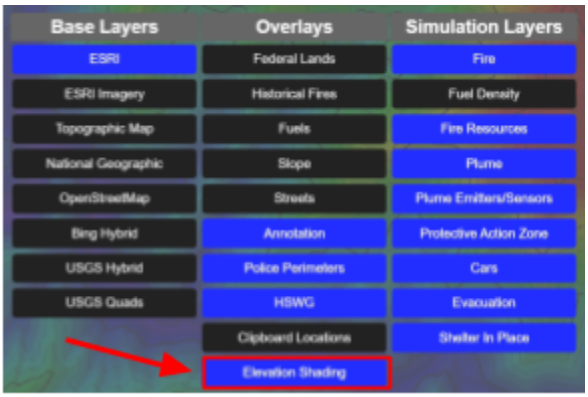
d. After rendering, the scenario should look like this:



3. Shape the Sand (*Skip if only using the AnyHazard Software Online***)**

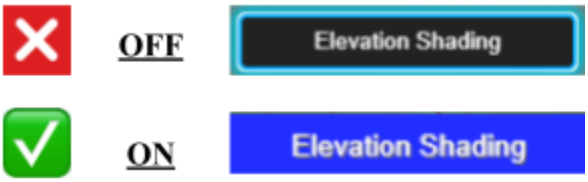
a. Select "Layers" located in the bottom left corner. Under the "Overlays" column, select "Elevation Shading" (if not already applied).





The elevation shading layers follow an RGB scale, where red is the highest elevation relative to the area within your scenario.

Hand-shape the sand to match the RGB elevation grid.



4. Set Fuel Type

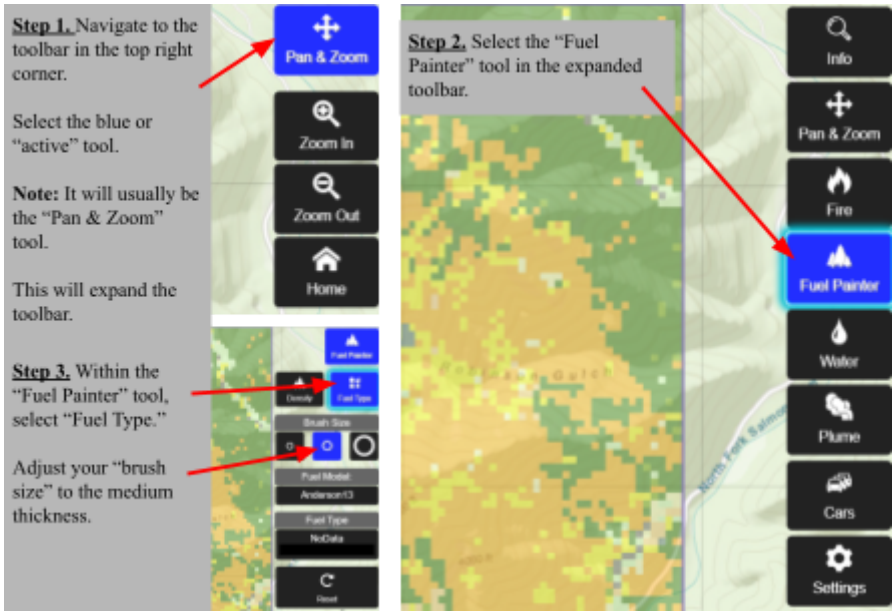
Fuel types are automatically generated based on Anderson 13 fuel models and federal fuel data. Developed by Hal Anderson in 1982, these fuel models categorize fuel types based on fuel characteristics that influence wildfire spread, intensity, and resistance to control. These models are divided into four broad groups: grass, shrub, timber, and slash, each containing specific fuel characteristics that represent different vegetation types and fire spread patterns. Each model helps predict fire behavior based on fuel structure, allowing fire managers to assess risks and develop response strategies

(Table describing the fuel characteristics present within each Anderson fuel model. Source: USDA, 1982)

Fuel model	Typical fuel complex	Fuel loading				Fuel bed depth	Moisture of extinction dead fuels
		1 hour	10 hours	100 hours	Live		
		Tons/acre				*Feet*	*Percent*
	Grass and grass-dominated						
1	Short grass (1 foot)	0.74	0.00	0.00	0.00	1.0	12
2	Timber (grass and understory)	2.00	1.00	.50	.50	1.0	15
3	Tall grass (2.5 feet)	3.01	.00	.00	.00	2.5	25
	Chaparral and shrub fields						
4	Chaparral (6 feet)	5.01	4.01	2.00	5.01	6 0	20
5	Brush (2 feet)	1.00	.50	.00	2.00	2.0	20
6	Dormant brush, hardwood slash	1.50	2.50	2.00	.00	2.5	25
7	Southern rough	1.13	1.87	1.50	.37	2.5	40
	Timber litter						
8	Closed timber litter	1.50	1.00	2.50	0.00	0.2	30
9	Hardwood litter	2.92	41	.15	.00	.2	25
10	Timber (litter and understory)	3.01	2.00	5.01	2.00	1.0	25
	Slash						
11	Light logging slash	1.50	4.51	5.51	0.00	1.0	15
12	Medium logging slash	4.01	14.03	16.53	.00	2.3	20
13	Heavy logging slash	7.01	23.04	28.05	.00	3.0	25

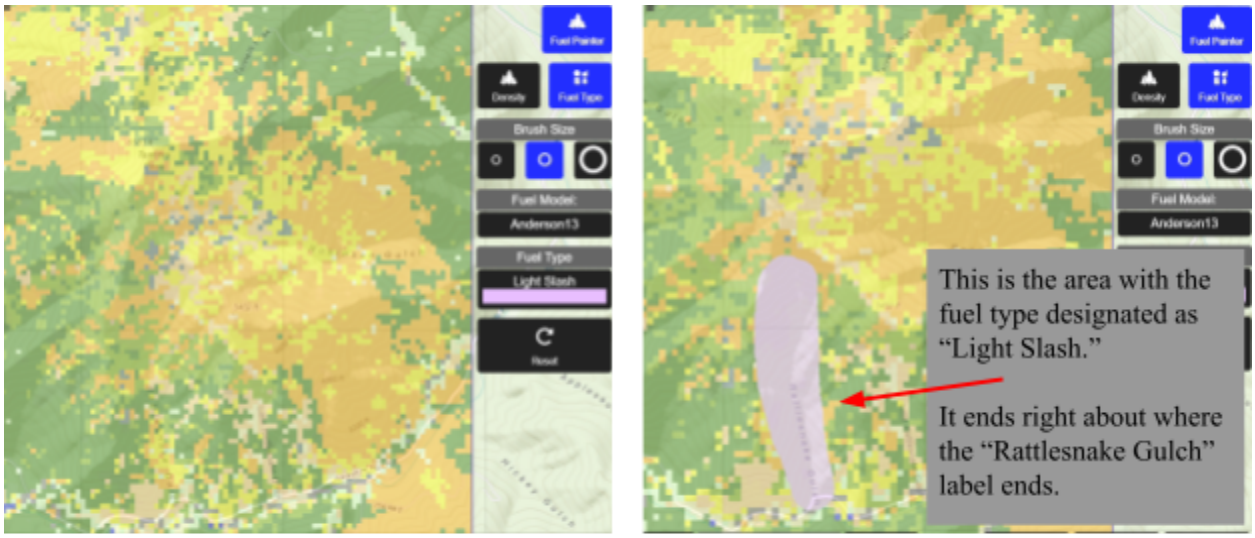
Fuel density and fuel type can be altered by changing the fuel type present in specific areas of the scenario using a “paint brush.” This can be used to mimic fuel management in specific areas that have caused a temporary change in density or types of available fuels.

a. Navigate to the “Fuel Painter” tool and select “Fuel Type”



b. Choose the fuel type that best mimics a recent timber harvest event (clearcut with some light slash left behind). For the purpose of this activity, select “Light Slash.”

c. On the map area, click and hold to paint the new fuel type on the Southeast canyon under Tanners Peak.



BEFORE **AFTER**

5. Create Man-Made Fuel Breaks

The “Black Line Tool” allows users to simulate fuel breaks.

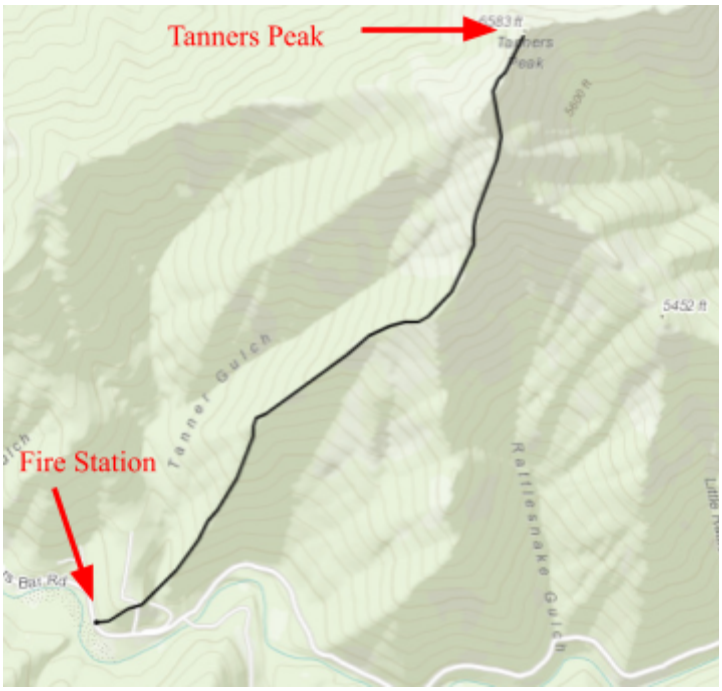
This tool has three predetermined stability options (Low, Medium, and High), which determine the effectiveness of the black line (whether the fire will penetrate or not, spotting, etc.).

a. To use the “Black Line” tool, navigate to the toolbar and select “Fire.” Then, select “Black Line.” Set the Line Stability to “Low.”

b. Then, draw along the “Spur Ridge” starting from Sawyers Bar Fire Station all the way to Tanners Peak.

Chapter 2: Running the Initial Attack Response as a Facilitator

Table 1. *Resource table indicating production rates and line stability. Use as a guide when inputting Resources into the simtable/anyhazard for the scenario in this manual.*



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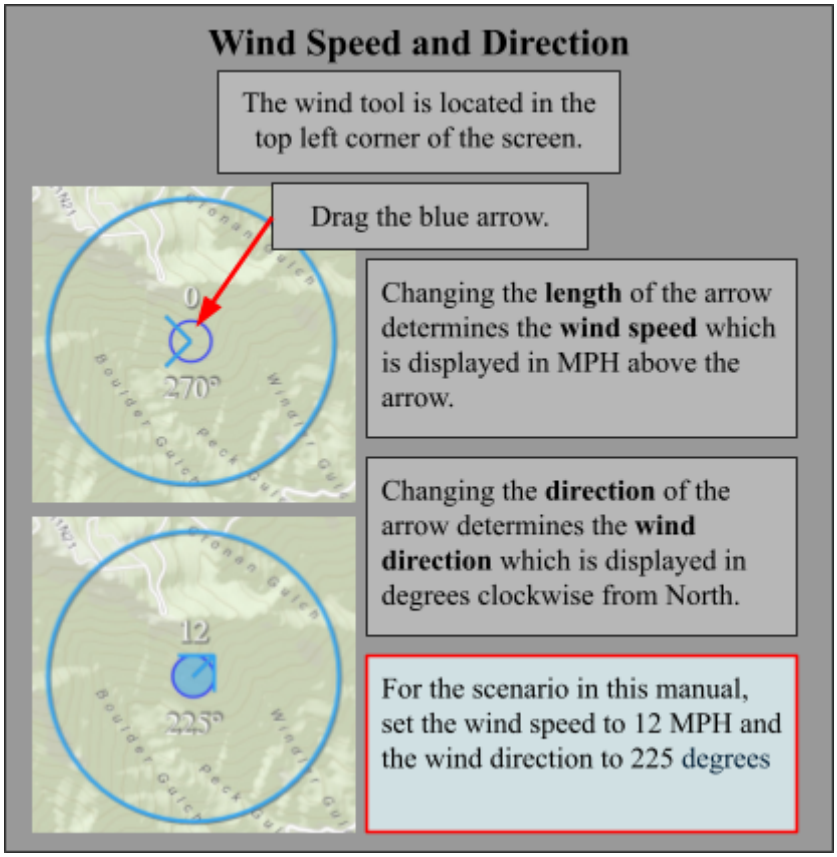
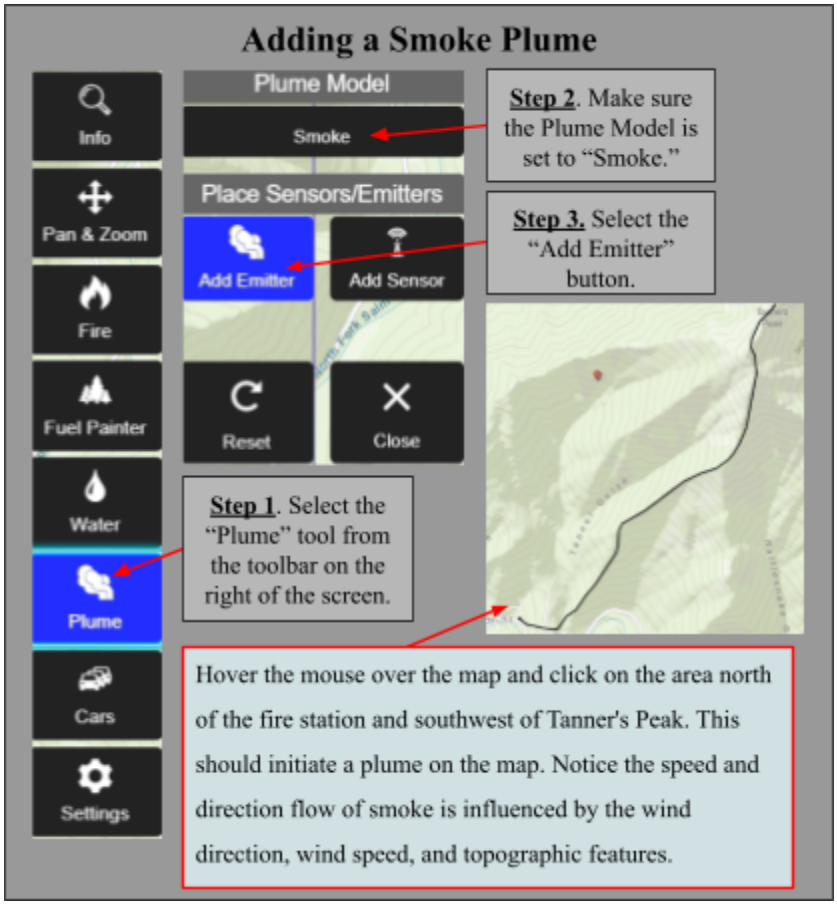
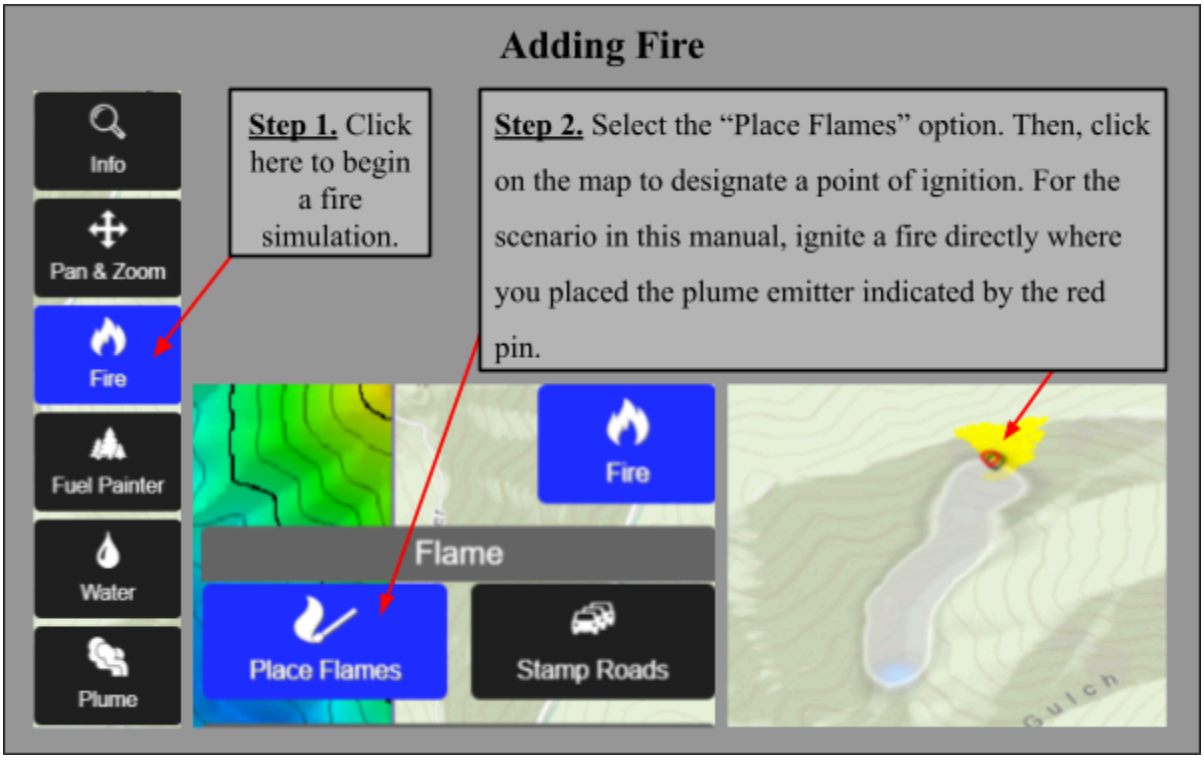
Helitack 502	Heli 1	/	Med	30	30

Running the Scenario




Adding a Smoke Plume
Info
Pan & Zoom
Fire
Fuel Painter
Water
Plume
Cars
Settings
Plume Model
Smoke
Place Sensors/Emitters
Add Emitter
Add Sensor
Reset
Close
Step 2. Make sure the Plume Model is set to "Smoke."
Step 3. Select the "Add Emitter" button.
Step 1. Select the "Plume" tool from the toolbar on the right of the screen.
Hover the mouse over the map and click on the area north of the fire station and southwest of Tanner's Peak. This should initiate a plume on the map. Notice the speed and direction flow of smoke is influenced by the wind direction, wind speed, and topographic features.

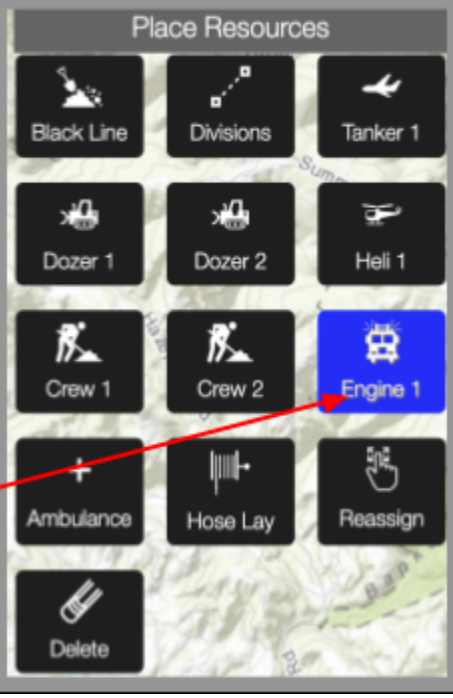

Adding Fire
Info
Pan & Zoom
Fire
Fuel Painter
Water
Plume
Step 1. Click here to begin a fire simulation.
Step 2. Select the "Place Flames" option. Then, click on the map to designate a point of ignition. For the scenario in this manual, ignite a fire directly where you placed the plume emitter indicated by the red pin.
Fire
Flame
Place Flames
Stamp Roads

Adding Resources

Step 1. Select the "Fire Tool"

Step 2. Select the desired resource, then click the area of the map where the resource is to be added.

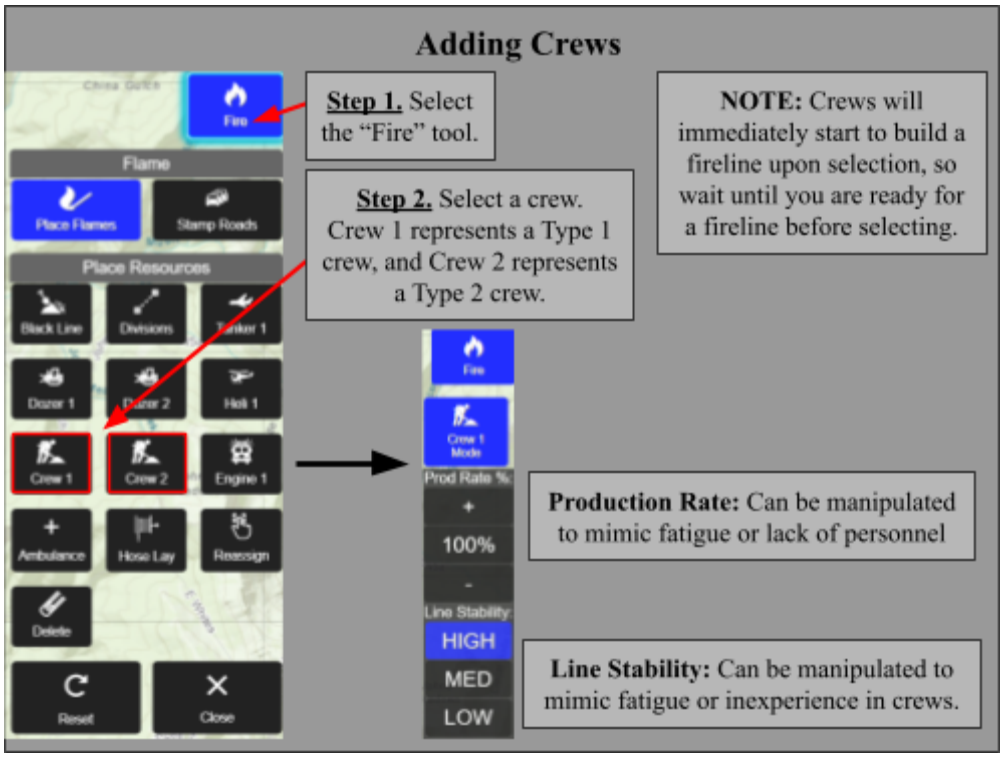
For the scenario in this manual select the **Engine 1** button. Click on the Sawyers Bar Fire Station to add the engine to the map.



Moving Fire Engines

Click on the "Fire" tool, then select the "Reassign" button directly under the "Engine 1" button. This will close the menu and bring you back to the scenario. Click on the engine you would like to reassign and trace a path for the engine to travel. Once you've settled on the new position for the engine, click the play button at the bottom of the map.

NOTE: Engines can only travel along paved roads.



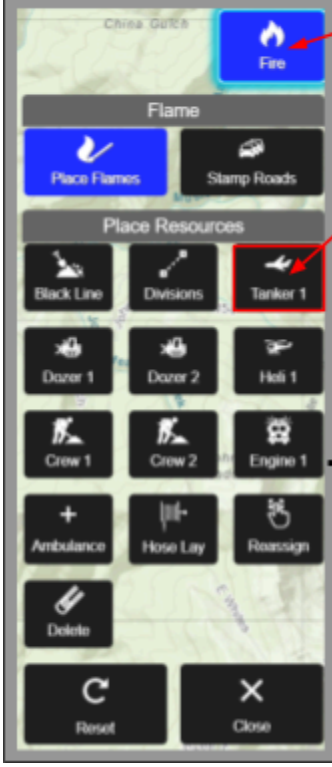
The production rate difference between crew types varies based on the fuel type and is based on the NWCG Line production rate determined by San Dimas Technology and Development Center.

For the scenario in this manual see **Table 1** for specific production rate and line stability for resources. Once you have set production rate and line stability click the area of the map you would like the crew to initiate line building.

Table 2. *Sustained line production rate of 20 person crew in feet per hour.*

Fire Behavior Fuel Model	Type 1 Direct	Type 1 Indirect	Type 2 and 2 IA Direct	Type 2 and 2 IA Indirect
1. Short Grass 2. Open Timber Grass	1,122 (792 - 1,386)**	627 (508–746)	627 (174–660)	285 (174–380)
4. Chaparral	436 (330–528)	330 (178–482)	449 (80–640)	272 (178–376)
5. Brush	1,089 (924–1,254)	323 (244–403)	471 (304–682)	277 (178–376)
6. Dormant Brush/Hardwood Slash	1,089 (924–1,254)	323 (244–403)	471 (304–682)	277 (178–376)
8. Closed Timber Litter 9. Hardwood Litter 10. Timber (Litter & Understory)	693 (594–792)	455 (396–515)	447 (370–448)	378 (255–452)

Using the Air Tanker

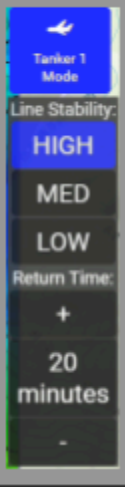


Step 1. Select the "Fire" tool.

Step 2. Select the "Tanker 1" button.

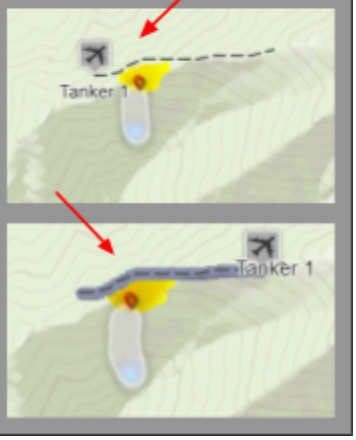
Step 3. For the scenario in this manual see the Resource Table (**Table 1**) to assign Line Stability and Return Time to your resources.

Step 4. Once Line Stability and Return Time are set, click and drag the path for the air tanker to follow and drop. Press the **Play** button to initiate the drop.



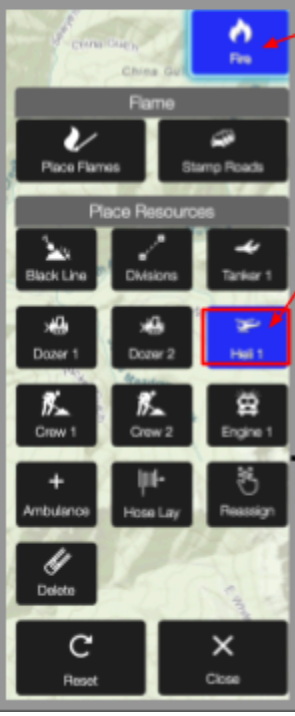
To simulate real world scenarios **Line Stability** should depend on the fuel type of the scenario.

Return Time is based on the distance from a "fill spot" to the fire.



Using the Helicopter

The Helicopter tool works similar to the air tanker tool except it can follow a predetermined path regardless of length. The duration for the helicopter to finish the "Wet Line" is determined by the return time. It will travel a distance of 325ft for each interval of return time. Any Hazard only has one type of helicopter present, This resource is based on a Type 1 Helicopter.

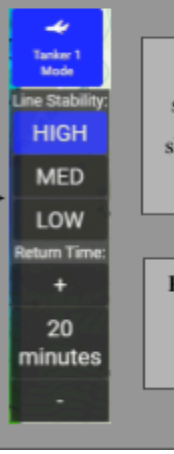


Step 1. Select the "Fire" tool.

Step 2. Select the "Heli 1" button.

Step 3. For the scenario in this manual see the Resource Table (**Table 1**) to assign Line Stability and Return Time to your resources.

Step 4. Once Line Stability and Return Time are set, click and drag the path for the helicopter to follow and drop. Press the **Play** button to initiate the drop.

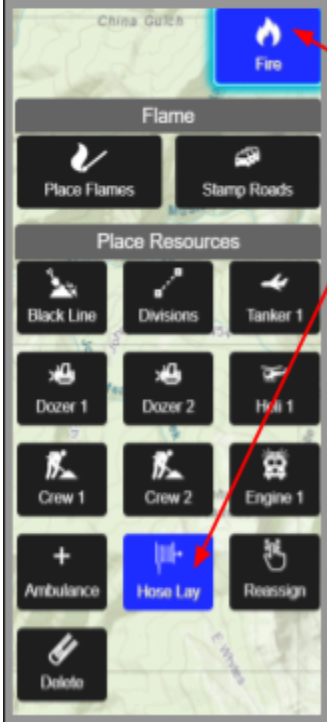


To simulate real world scenarios **Line Stability** should depend on the fuel type of the scenario.

Return Time is based on the distance from a "fill spot" to the fire.

Initiating a Hose Lay

To create realistic scenarios, ensure that hoselays begin at water sources or are attached to engines. Each hoselay is 100 feet long. At each 100-foot interval, add another Hose lay section to continue the hoselay as needed.



Step 1. Select the "Fire" tool.

Step 2. Select the "Hose Lay" tool.

For the scenario provided in this manual refer to the Resource Table for the production rate of your specific resource.

Step 3. The production rate should match that of the engine your hoselay is attached to.

Step 4. Click on the map to select the starting point for your hoselay. The hoselay will extend up to 100 feet.

NOTE: To simulate a progressive hose lay, you must add another section where the initial hoselay ends.To simplify this process, you can trace the desired path for the progressive hose lay.