Incident Summary Page for the 100 Fires Project

Incident Name: Rattlesnake Fire	**Incident Date & Time:** 07/09/1953 @ 22:15
Incident Location: Mendocino National Forest near Elk Creek, California	**Incident Size:** 1,200 acres
Types of resources involved: New Tribes Mission handcrew and US Forest Service firefighters	**# of Fatalities/injuries:** 15 fatalities

Reasons this fire was selected for the 100 Fires list:

- Fire is historically significant
- 3 or more firefighter fatalities by entrapment

Conditions leading up to the event:

Powder House Canyon is located in the Coast Range of northern California and is oriented in a northwest to southeast position. The top of the canyon at Powder House Turn is at 2500 feet in elevation and the mouth of the canyon at 1000 feet in elevation. It is in perfect alignment with the daytime up-canyon/up-slope diurnal winds as well as down-canyon/down-slope nighttime winds.

It is bordered to the north by the massive and steep Grindstone Canyon, which runs 30 miles from the crest of the forest out towards the valley to the west. There are many sharp topographic features such as saddles, chutes and ridges that define the area. During the summer months, it is not uncommon for the area to reach temperatures of 100+ degrees Fahrenheit.

When the Sacramento Valley reaches high temperatures, it creates a thermal low in the valley, caused by rising heat which in turn, pulls in cooler air from the coast. High pressure and low pressure systems need to be in the right areas for this to occur as well as a deep fog layer being pulled inland from the coast. This essentially sets up a "Sundowner" influence bringing strong downhill subsiding winds which are perfectly channeled through Powder House Canyon and Grindstone Canyon. This Sundowner wind typically overrides the local diurnal wind conditions. In 1953, fire weather forecasting was in the early stages of development and local fire managers relied on very widespread general forecasts during fires. The forecasts for the Rattlesnake Fire did not mention any steep pressure gradients in the upper atmosphere nor a thermal low forming over the Sacramento Valley. The fire commanders based tactics on known diurnal conditions and did not receive any prior warning of the Sundowner condition that was setting up.

Records dating back to 1911 did not indicate the Powder House Canyon had any fire history for over 40 years. The chamise was over 10-15 feet in height with interlocking crowns and very difficult to move through, especially at night.

Brief description of the event:

The Rattlesnake Fire was the second arson-caused wildfire in this area on the afternoon of July 9. California Department of Forestry and Forest Service resources had contained the 11 acre Chrome Fire just prior to the Rattlesnake Fire being reported.

While returning from the Chrome Fire, Forest Patrolman Archie Millar came across the Rattlesnake Fire. He estimated the fire at a quarter acre and burning in thick brush. Initial attack was abandoned soon after due to the fire behavior and a wall of thick brush. About this time Charlie Lafferty, the District Fire Control Officer, arrived and directed the initial attack engines to move up Alder Springs Road to the head of the fire at Powder House Turn. Soon Fire Boss Jack Ewing arrived as well as Forest Supervisor Leon Thomas. Ewing was assigned as Fire Boss and Lafferty as Line Boss. The three of them developed a plan to "box" in the fire and these control actions were successful for the remainder of the day. Work was progressing smoothly and at one point Line Boss Lafferty felt they would have the fire contained in few hours. There were California Department of Forestry and Forest Service engines, local loggers, local dozers, and a hand crew from the New Tribes Mission on the fire.

The engine crews firing operation from the point of origin going up Alder Springs Road moved smoothly until 20:00 when they reached an in-turn drainage. Here a fire whirl developed and threw several spot fires across Alder Springs Road on the downhill side. The firing was stopped at this point, and these spots were successfully contained. At 20:15, Forest Supervisor Thomas was on Alder Springs Road, and saw a small spot fire directly across the canyon and on the other side of Powder House Creek. Thomas walked to the spot fire around 20:30, it was very low intensity and he felt it would run north to the top of Powder House Ridge where they would make an attack. As the diurnal winds subsided, the fire laid down and a dozer line was constructed from Powder House Turn up Powder House Ridge to contain the spot fire.

At 21:00, after consultation with Thomas, Line Boss Lafferty decided on direct attack for the spot fire and to staff it with the 23-man New Tribes Mission Crew. He sent them down into the now titled Missionary Spot Fire from Powder House Turn. They reached the spot fire and constructed a direct line around it containing it to a half acre. Shortly after the crew had left the road, lunches arrived at Powder House Turn. Bob Powers, a Forest Service employee based at Alder Springs, informed Lafferty the New Tribes Mission Crew had not eaten all day and he volunteered to take the lunches down to the crew. Lafferty agreed and Powers left at 21:45. He joined up with the crew and they sat down in a small drainage at the bottom of the spot fire to eat. Powers and Stanley Vote, the New Tribes Mission Crew Boss, walked up to a spur ridge to assess the fire behavior from the burning operation. They did not see anything that

caused them alarm. They returned to the crew. At this time, the Missionary Spot Fire was the only spot outside the control box, and it was lined and smoldering.

As they were eating, the firing operation from High Point to Powder House Turn continued. At 22:00 a strong westerly wind surfaced, channeling through a saddle and overriding the local diurnal winds. This caused the fire from the firing operation to transition from a backing fire to a running head fire moving downhill towards Alder Springs Road. Numerous spot fires were transported over Alder Springs Road down into intersecting drainages in Powder House Creek. Engine crews attempted to control to the spot fires but had to abandon their effort due to the fire behavior and distance downhill to reach the spots. One of these spot fires made a significant run upslope to the north towards Powder House Ridge and Powder House Turn. Lafferty realized this would cut off the escape route for the New Tribes Mission Crew, he ran through the brush to yell a warning. The crew started out, moving in two groups both moving straight uphill towards Lafferty and the dozer line. When Lafferty realized the lower group would not make it to the ridge he yelled to *"head downhill"* to get under the uphill fire run. The first group of nine crewmembers arrived at the ridgetop and survived. As the second group of 15, including Bob Powers, headed downhill to escape the fire, the full power of the gradient Sundowner wind surfaced. This overrode the local winds and turned the head fire, which was running north, 90 degrees to the east where it overran the 15 firefighters in the second group. All 15 perished. The Rattlesnake Fire was controlled two days later, on July 11 at 12:00 acres.

Charley Lafferty was troubled by this fire for the rest of his life. He felt he caused the 15 fatalities by telling them to go downhill. After the investigation interviews were finished, he refused to publicly talk about the Rattlesnake Fire for the rest of his life. He shouldered this burden even though there were many causal factors that contributed to the accident.

Fire Boss Jack Ewing was also the Fire Boss ten years earlier on the 1943 Hauser Creek Fire. Eleven US Marines were overrun by fire and perished. He was held partially accountable for the fatalities for assigning an inexperienced Line Boss to supervise fire operations and not checking back on progress.

Fire behavior factors that were present during the event:

Arson fire ignited at the base of a slope in full sun exposure with 40-year-old chamise with mixed buckeye, toyon, and grey pine. Drought impacted live and dead fuel moistures.

Topography in alignment with wind. Local diurnal wind patterns produced a wide range of wind velocities, ranging from 8-15 mph at night.

An early pioneer in fire weather forecasting was William Krumm, a Fire Weather Meteorologist from Missoula, Montana. In February 1954 he offered a draft explanation of the meteorological conditions that occurred on the Rattlesnake Fire. He very correctly described the "Sundowner" effect: sr-rs-usfs-meteorological-conditions-rattlesnake-fire-1954.pdf (nwcg.gov)

Operational lessons available for learning from this incident:

Dedicated and specific fire weather forecasting including upper atmosphere pressure gradients, barometric pressure, and potential for high pressure subsidence winds on local topography.

Posting of lookouts, dedicated escape routes, and safety zones.

Notable impact or historical significance for the wildland fire service from this incident:

The Rattlensake Fire was one in a string of major tragedy fires which occurred between 1937 and 1956. Several of the events gained wide public notoriety, which eventually prompted a national task force to be appointed and directed to study these fires and suggest ways to improve the situation. What followed in 1957 was *The Report of the Task Force to Recommend Actions to Reduce the Chances of Men Being Killed by Burning While Fighting Fires*. This work was the original source for the "10 Standard Firefighting Orders" and many other improvements for the wildland fire service.

This fire is a historical example showing some of the staffing methods that the US Forest Service had to utilize during the first 50 years of its existence. Organized hand crews staffed completely with agency personnel did not become a reality until the 1960s.

Links to more information on this incident:

https://www.nwcg.gov/wfldp/toolbox/staff-ride/library/rattlesnake-fire
https://web.archive.org/web/20070930203917/http:/www.time.com/time/magazine/article/0,9171,889816,00.html
https://lessons.wildfire.gov/incident/rattlesnake-fire-1953
https://wlfalwaysremember.net/1953/07/09/rattlesnake-fire

Incident Summary Page for the 100 Fires Project

Book: ➢ *River of Fire: The Rattlesnake Fire and the Mission Boys* ~ by John Maclean

This summary page was proudly provided by: Don Will, former Superintendent Mendocino Hotshot Crew	September 2023

The following is a list of the firefighters who perished on the Rattlesnake Fire on July 9, 1953

Robert Powers	Forestry Aid GS-7 USFS Employee
Stanley Vote	Forestry Aid GS-4 USFS Employee and Missionary Crew Foreman
Allan Boddy	Missionary Crewmember
Sergio Colles	Missionary Crewmember
Ben Dinnel	Missionary Crewmember
Paul Gifford	Missionary Crewmember
Harold Griffis	Missionary Crew Straw Boss
Cecil Hitchcock	Missionary Crewmember
David Johnson	Missionary Crew Straw Boss
Robert Mieden	Missionary Crewmember
Darrel Noah	Missionary Crewmember
Howard Rowe	Missionary Crewmember
Ray Sherman	Missionary Crewmember
Daniel Short	Missionary Crewmember
Hobard Whitehouse	Missionary Crew Boss

"So that no man shall walk alone, we carry the burden of our brothers, Always."

Incident Summary Page for the 100 Fires Project

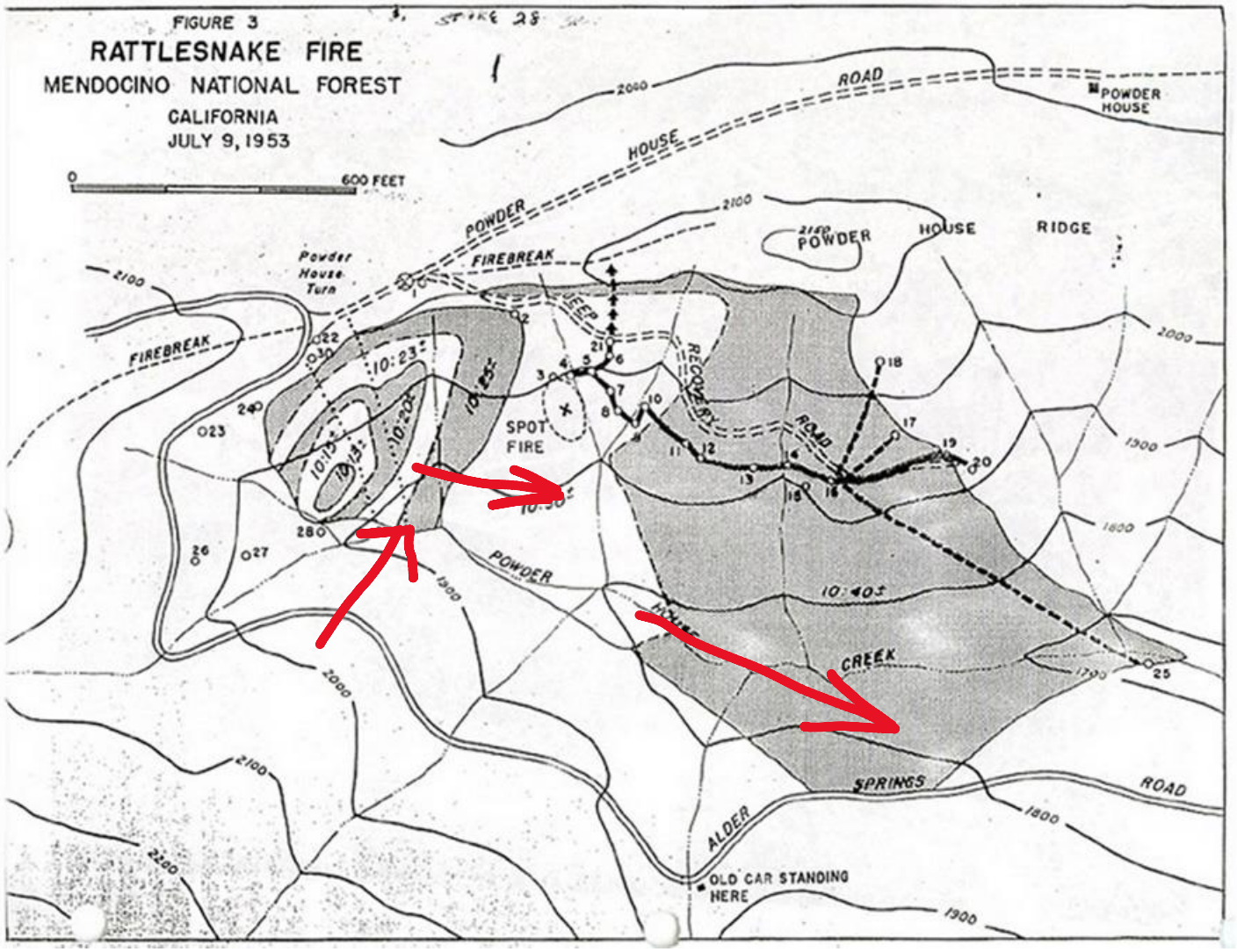

Diagram from the Investigation Report

Red lines show direction of spread of the spot fire caused from the firing operation between High Point and Powder House Turn. This spot fire ran straight upslope, until it was turned in a 90-degree right angle when fully exposed to the sundowner winds.

Incident Summary Page for the 100 Fires Project

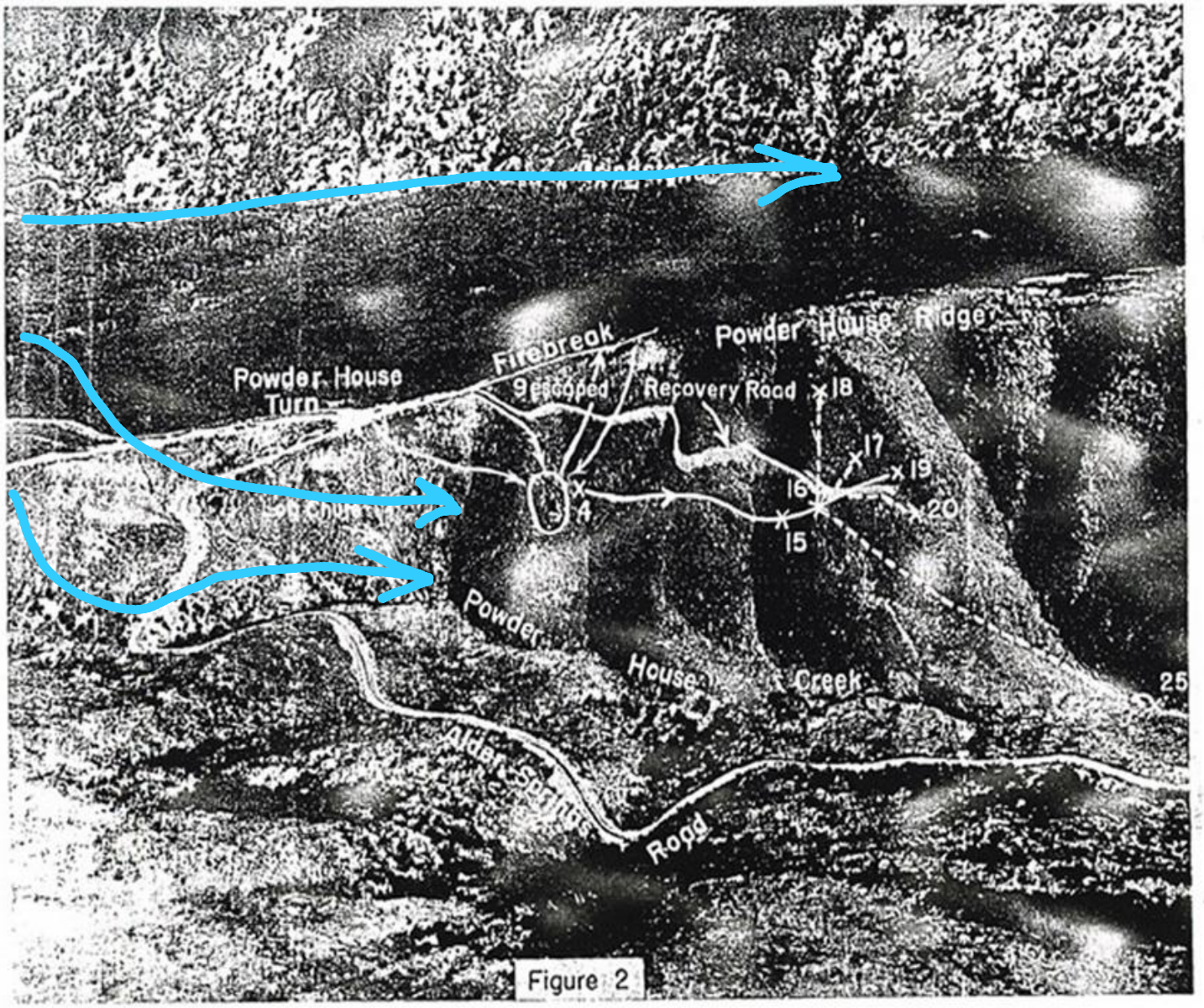

Photo from the Investigation Report

Shows the escape path and location of the victims remains. Blue line indicates wind direction through saddles into Powder House Canyon and Grindstone Canyon as it was pushed downhill by subsidence.

Incident Summary Page for the 100 Fires Project

View looking Northeast from High Point to Powder House Turn

Orange line indicated completed handline/dozer line from High Point to Powder House Turn. This was the line Werner was firing when the Sundowner winds surfaced just after 2200. Blue lines indicate direction of Sundowner winds.

Note: the right turn in the dozer line is the saddle the Sundowner winds channeled through effectively pushing Werner's firing operation downhill and over Alder Springs Road throwing numerous spot fires into Powder House Canyon. It was one of these spot fires that blew up and overran the New Tribes Mission crew.