Incident Summary Page for the 100 Fires Project

Incident Name: Loop Fire	**Incident Date & Time:** 11/01/1966 @ 15:45
Incident Location: Angeles National Forest near Sylmar, California	**Incident Size:** 2,028 acres
Type of resources involved: US Forest Service Hotshot Crew	**# of Fatalities/injuries:** 12 fatalities / 10 injuries

Reasons this fire was selected for the 100 Fires list:

- Fire made a notable impact within the wildland fire service
- 3 or more firefighter fatalities
- Hotshot line of duty death

Conditions leading up to the event:

The 1966 fire season was a busy one for the El Cariso Hotshots. They had been to 17 fires leading up to the Loop Fire. El Cariso had three crews that would be on the same fires but work independently of each other. They combined them into two crews for the Loop Fire, because they had lost several seasonals in the months previous. Crew members were leaving to return to school or other jobs. Southern California had been in a two-year drought. Fuel conditions were primed and ready to burn. There had been several Santa Ana events prior to the one that was present during the Loop Fire.

Brief description of the event:

The Angeles National Forest in Southern California is known for its steep, rocky terrain and strong, dry downhill winds, known as Santa Anas. Early in the morning on November 1, 1966 a fire was started by a faulty electric line at the US Army LA-94 Nike Missile Site on an exposed ridge at the head of Loop Canyon. Chamise, sage, and sumac were the dominant fuels, with critically low live fuel moistures. Santa Ana conditions prevailed, and the fire was driven downhill rapidly by 60 mph northeast winds toward an urban area at the bottom of the canyon. The temperature was 73 °F with 15% relative humidity (RH).

At 05:20, a lookout reported the fire, initial attack took place at 0536, and by 06:00 the first reinforcements were arriving. The fire weather forecast issued a warning at 08:30 for Santa Ana conditions in the fire area, with a high temperature of 87-95 °F and 10% RH. Firefighters were experiencing east-northeast winds at 40 to 60 mph. At 13:00, the temperature was 80 °F with 12% RH. By that time the Chilao Hotshot Crew and the Dalton Hotshot Crew were on scene lining a slop-over and building direct handline south from Contractors Point above Loop Canyon. At 14:00 the Del Rosa Hotshot Crew arrived and moved down ahead of the other crews and started building direct handline as well.

At 14:30 the El Cariso Hotshot Crew arrived at Contractors Point. They received instruction from the Line Boss to *"Leapfrog the last crew and cold trail down the fire edge if possible."* The Line Boss also said *"The main ridge could be used as an alternate if impossible to fallow the burned edge."* Much of the fire edge past where the Del Rosa Hotshots were working was in or near a chimney shaped canyon. The winds were decreasing but continued with considerable channeling and eddying. At 1500, the El Cariso Hotshots decided it was possible to cold trail down the chimney and tie in with the crews working the lower edge of the fire. It was noted that there was no clean black. Resources working this lower edge of the fire included a county dozer and handcrews along with a helicopter making water drops. The El Cariso Hotshots had not been issued a local radio and did not have capability to talk to the county resources on a common radio frequency. The El Cariso Hotshot Crew Superintendent also never had any contact with his Division Boss who was responsible for that part of the fire, again due to lack of radios.

By about 15:30 the crew was only 500 feet away from tying in with dozer line and crews working the bottom. At this point the terrain was too steep to continue direct line and they decided to go indirect 50 to 100 feet away from the fire's edge. They were working in unburned fuel, hazardous topography and were unaware the fire had established a hot spot at the base of the chimney below them, burning in sumac bushes and heavy litter. At 15:45, a flare-up occurred and a *"reverse tool order"* (turn back and get out fast) was immediately given to the crew. In less than a minute the fire flashed through the chimney, overcoming the entire crew. 12 firefighters perished in the fire run…10 individuals died immediately on-site and two others died later in the hospital. Additionally, 10 other firefighters sustained severe burn injuries that required hospitalization. The crew did not carry their fire shelters with them on this assignment as agency policy at that time deemed fire shelters as optional equipment. However, given the rapid rate of spread up the chimney it is doubtful that any of the crewmembers would have been able to deploy their shelter in time and the absence of fire shelters was not identified as a significant factor.

Several of the other hotshot crews the El Cariso Hotshots had leapfrogged past did complete the hand line down the main ridge later that evening tying it in at about 1900. Rotor wash from the helicopter doing water drops was later listed in the investigation report as one of three sources that may have contributed to the flare-up and fire run out of the bottom. One other item of historical note…on the same day as the Loop Fire burnover, another wildfire burnover occurred on Camp Pendleton, less than 50 air miles south. Five Marines fighting a brush fire lost their lives.

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Fire behavior factors that were present during the event:

Strong northeast winds (Santa Anas) pushed the fire downhill from the Nike Missile Site to the urban area of Sylmar below. The fire consumed chamise, sumac, manzanita, and buckwheat. The fire moved with a rapid rate of spread downhill and had extreme intensities. The wind event was in its third day. The terrain in the area of the fire was steep and some parts of the direct edge of the fire were inaccessible. When the wind conditions changed, the onshore pattern returned and the heat in the bottom flashed up the steep chimney within seconds.

Operational lessons available for learning from this incident:

The value of lookouts and establishing communication with adjoining forces.

Working in steep terrain adjacent to chimney features is extremely hazardous and should be avoided.

Uphill escape routes are a poor option in most any situation.

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

The outcome of the Loop Fire lead to the 1967 report titled *A Plan to Further Reduce the Chances of Men Being Burned While Fighting Fires.* This report was the impetus for the creation of the "Downhill Line Construction Checklist" as well as numerous other significant firefighter safety recommendations including development of improved flame resistant clothing and fire shelters, development of light weight handheld radios, and the establishment of air net frequencies for ground crews to talk with helicopters.

The team that worked on this report made direct connections to the previous work found in the 1957 *Report of the Task Force to Recommend Action to Reduce the Chances of Men Being Killed by Burning While Fighting Fire*.

Links to more information on this incident:

https://www.nwcg.gov/wfldp/toolbox/staff-ride/library/loop-fire
http://www.norwegianwest.com/elcarisohotshots1966/
https://www.nwcg.gov/sites/default/files/wfldp/docs/sr-loop-investigative-report.pdf
http://www.nwcg.gov/sites/default/files/wfldp/docs/sr-loop-fire-safety-team.pdf
https://www.nwcg.gov/committee/6mfs/loop-fire
https://wlfalwaysremember.net/1966/11/01loop-fire/
https://wildfiretoday.com/wp-content/uploads/2014/11/lppfirerichleakrevised.pdf

Videos:

- https://www.youtube.com/watch?v=rS59QlowY9U
- https://www.youtube.com/watch?v=iwvtXSg7f7o&list=PLF7E725D8AC582DF4

The Wildland Fire Lessons Learned Center offers an excellent site which provides information on many wildland incidents.
Wildland Fire Lessons Learned Center's Incident Review Database (IRDB) (wildfire.gov)

This summary page was proudly provided by:	
Bear Divide Hotshots	September 2023


LOOP FIRE
THIS PARK AND MEMORIAL STAND AS A TRIBUTE TO THE YOUNG MEN WHO LOST THEIR LIVES ON THE LOOP FIRE, TO THOSE WHO SURVIVED, AND TO FIREFIGHTERS EVERYWHERE.
LOOP FIRE 1966
FOREVER HONORED
THOSE WHO LOST THEIR LIVES
RAYMOND CHEE-AGE 23
JAMES MORELAND-AGE 22
MICHAEL WHITE-AGE 20
JOHN FIGLO-AGE 18
WILLIAM WALLER-AGE 21
JOEL HILL-AGE 19
STEVEN WHITE-AGE 18
CARL SHILCUTT-AGE 26
JOHN VERDUGO-AGE 19
DANIEL MOORE-AGE 21
KENNETH BARNHILL-AGE 19
FREDERICK DANNER-AGE 18
NEVER FORGOTTEN SURVIVORS
GORDON KING
WARREN BURCHETT
JOHN MOORE
RICHARD LEAK
ROBERT CHOUNARD
PATRICK CHASE
STEPHEN BOWMAN
JERRY SMITH
GLENN SPADY
JOSEPH SMALLS
EDWARD COSGROVE
RODNEY SEEWALD
THOMAS ROTHER
WILLIAM PARSHALL
CHARLES GIBSON
FRANKLIN KEESLING
JERRY GUNTER
WILLIAM DAVIDSON
THOMAS SULLIVAN
On November 1, 1966, the El Cariso Hot Shots, a USDA–Forest Service Interregional Wildland Firefighting Crew working on the Loop Fire, were trapped by flames in a steep canyon on the hillside directly in front of you.
The crew was constructing fireline downhill into a chimney canyon, and were within 200 feet of completing their assignment when a sudden shift of winds caused a spot fire directly below where they were working. Within seconds, flames raced uphill, engulfing the firefighters in temperatures estimated to reach 2,500 degrees F. The fire flashed through the 2,200-foot long chimney canyon in less than one minute, catching the crew while they attempted to reach their safety zones.
Ten members of the elite firefighting crew, the El Cariso Hot Shots, perished on the Loop Fire that day. Another two members succumbed from injuries in the following days. Most of those who survived were critically burned and remained hospitalized for some time.
In the last 30 years, lessons learned from the Loop Fire tragedy have been shared with firefighters around the world, saving many lives.
Dedicated November 1, 1996

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El Cariso Hotshot Crew October 1966 (Crew 1 on the left and Crew 2 on the right)

Loop Fire under Santa Ana wind influence