

Informational Summary Report of Serious or Near Serious CAL FIRE Injuries, Illnesses and Accidents



GREEN SHEET

Fire Shelter Deployment

September 9, 2020

North Complex West Zone

20-CA-BTU-010751

California Northern Region

SUMMARY

On September 9, 2020, at approximately 1:25 PM, a CAL FIRE Handcrew engaged in structure defense operations had their escape route cut off due to a fast-moving wildland fire. The handcrew sought refuge in an Emergency Crew Transport vehicle and then moved into a residential structure before being forced back outside to deploy their fire shelters. The deployment occurred on the North Complex West Zone Incident near Oroville, California in the CAL FIRE Butte Unit which burned over 200,000 acres in a two day period. This Green Sheet outlines the sequence of events leading up to the deployment and the series of decisions made which ultimately led to a successful outcome.

CONDITIONS

The area was under a Red Flag Warning on September 8th and 9th, 2020 due to strong offshore winds, low humidity and dry fuels after a period of excessive heat. These conditions contributed to the rapid spread of the fire over the course of these two days, estimated to be over 200,000 acres.

Weather

- Temperature: 82° Fahrenheit
- Relative Humidity: 13%
- Winds: NNE @ 3 MPH with NW gusts up to 9 MPH
- Visibility: Dense smoke over area

Topography

- Deployment site was on a knoll adjacent to a residential structure surrounded by numerous drainages.
- Elevation: 1,960'
- Aspect: South
- Deployment site slopes: Gravel area, approximately 1-2%

Fuels

The Northern California Geographic Coordination Center (GACC) issued a Fuels and Fire Behavior Advisory on September 7, 2020 for low fuel moisture, high ERCs and above normal fine fuel loading. This anomaly during a Severe Drought exists due to the timing of late spring moisture during the growing season. Overall, the fuel situation was at critical fuel levels, primed by weeks of record heat and dry air.

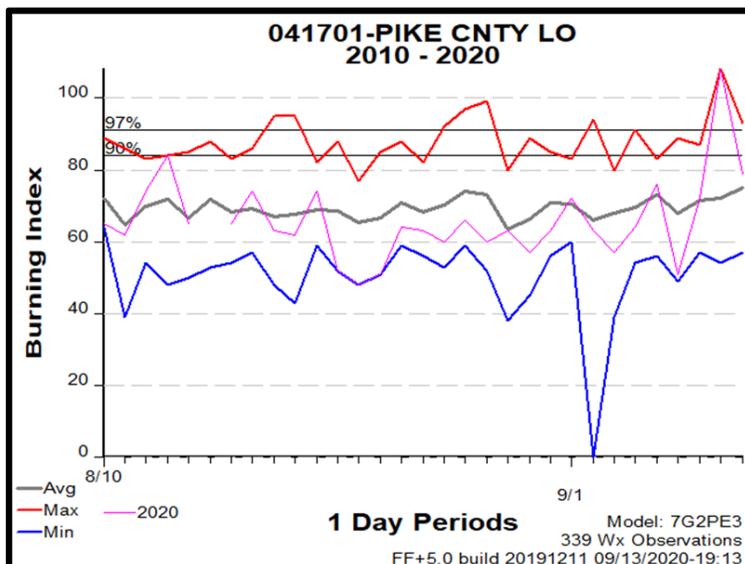


Diagram 1- The BI had just seen a seasonal record

Fire Behavior

September 8th and 9th, 2020 exhibited active crown fire. The Bear and Claremont fires merged into the North Complex and completed a 25-mile run to Lake Oroville. This fire path saw flame lengths in excess of 40 feet and spotting 2 miles ahead of the fire front. Overnight, the dry air mass funneled down the drainages, aligning with the diurnal downslope winds. This sped the fire's path into Brush Creek, Berry Creek, and Lumpkin.

At the incident location, the fire consumed all available fuels (surface fuels, brush, oak trees, and shorter conifers), except for a few remaining taller pine trees and oaks which were saved as a result of the firing operation around the house prior to the burnover.

Make/Model of Equipment

- 2010 International Emergency Crew Transport, Model 4400

Structural Features

- 1,560 square foot manufactured home on 5 acres with fiber cement siding, composite decking materials and composite roof.

Defensible Space

- The property owners conducted a significant amount of defensible space work around the house following purchase of the property in January of 2019.

Road Conditions

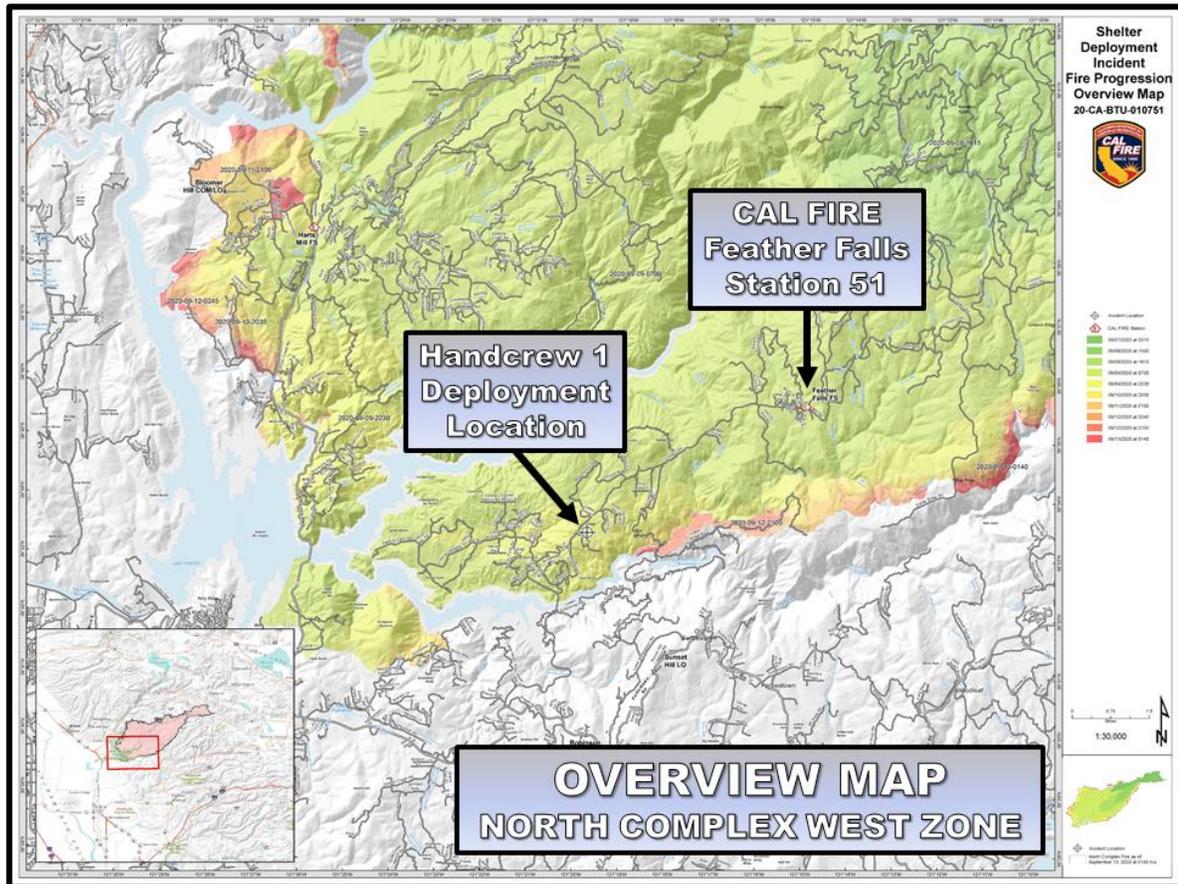
- Lumpkin Road is a two lane, paved county road. Access to the residence from Lumpkin Road was from a single lane dirt road and up a gravel driveway.

SEQUENCE OF EVENTS

On September 8, 2020, at approximately 5:30 PM, a CAL FIRE Handcrew Strike Team (Crew Strike Team 1) responded to the North Complex east of Oroville, CA, from a cover assignment in the CAL FIRE Nevada-Yuba-Placer Unit. At the time of the response, the North Complex was a well-established, fast moving fire burning down the Middle Fork of the Feather River Canyon due to strong and very dry east/northeast winds which were in alignment with the drainage.

At approximately 7:30 PM, Crew Strike Team 1 arrived at the CAL FIRE Feather Falls Fire Station in the Butte Unit where they received a briefing and were given their assignment by the Branch Director. Within minutes of their arrival, the fire front began to threaten their location. Due to the remote location of the fire station and single point of egress down Lumpkin Road, the firefighters began preparing for an imminent burnover of the fire station. They increased the amount of defensible space around the facility and initiated a defensive firing operation. As the fire front impacted the fire station, they sheltered in place until conditions became more favorable, then resumed tactical firefighting operations.

Throughout the night and into the next day, both crews from the Strike Team (Handcrew 1 and Handcrew 2) worked along Lumpkin Road, from Feather Falls Fire Station down towards Lake Oroville, initiating civilian evacuations, prepping and defending structures, and conducting defensive firing operations in coordination with other assigned resources in their Division.



Handcrew 1 [consisting of a Fire Captain (FC1) and 14 inmate Firefighters], continued to Prep and Defend structures throughout the morning. At approximately 11:00 AM, they had to drive out of the fire area in order to transport a trapped civilian and her dog to safety before returning.

At each structure, FC1 evaluated his handcrews probability of success based on ingress and egress factors, density of vegetation surrounding structures, defensible space measures conducted by the homeowner, ignition resistant construction materials used on the home, and location of adjacent resources working in the Division.

At approximately 12:45 PM, Handcrew 1 began prepping a structure off Lumpkin Road. Handcrew 2 was working approximately 1 mile below Handcrew 1's location while the Crew Strike Team Leader continued to assess structures and monitored the location of the fire in relation to the two handcrews. The Strike Team Leader radioed FC1 and notified him the fire was beginning to impact Handcrew 2's location. FC1 instructed his crew to cut brush from around the house and initiate a firing operation in order to create a buffer of burned fuel between the main fire front and the structure. As the fire front approached, the ambient light faded and the handcrew experienced a noticeable increase in fire intensity, ember production, heat and smoke. FC1

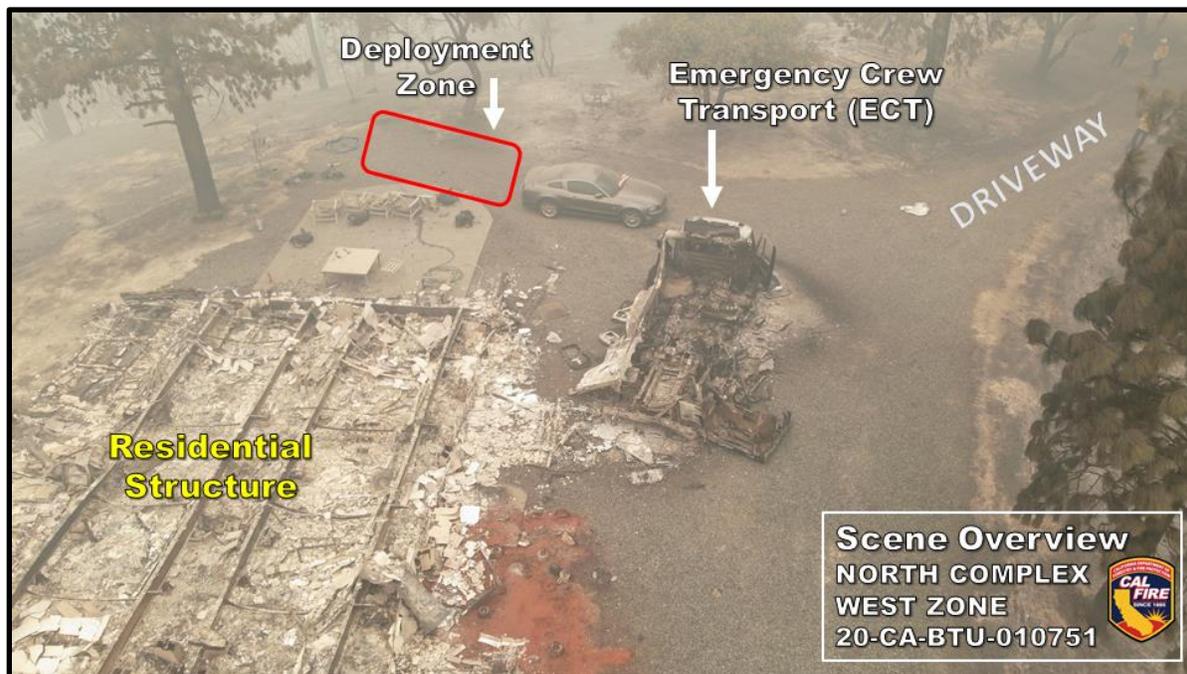


Photo & [Video](#) - Aerial overview of ECT, residential structure and deployment location. Burnout operations reduced fuel loading around house prior to fire front impact.

[\(Click here for Video\)](#)

instructed his crew to load up into the Emergency Crew Transport (ECT) in order to drive back out to Lumpkin Road and bump up ahead of the fire front.

At approximately 1:25 PM, FC1 drove down the driveway toward Lumpkin Road. He noticed his egress route was compromised due to the flaming front. FC1 turned around and drove back to the residential structure which he previously identified as a temporary refuge area. FC1 planned to take refuge in the ECT as the fire burned over their location. As the fire impacted them, there was limited visibility due to the smoke, strong gusty winds, and a noticeable increase in the amount of radiant heat coming into the ECT. Within minutes of parking, FC1 and the swamper noticed black smoke billowing into the cab of the ECT. Crew members in the rear of the transport noticed the walls of the ECT beginning to warp due to radiant heat.

Conditions in the vehicle were no longer tenable. FC1 instructed his swamper to direct the handcrew members to take shelter in the structure. They exited the ECT and FC1 forcibly entered the house through the front door. Once inside, he conducted a head count and then instructed the crew to look through a pile of mail in order to locate the address number of the house. FC1 radioed the Strike Team Leader that the handcrew was taking heat, the ECT was on fire, and they were taking refuge in a house. Priority traffic was established by the Division Group Supervisor and the Branch Director was notified. Fire suppression resources in the area began to respond to Handcrew 1's location as fire conditions along Lumpkin Road abated.

Within minutes the house ignited at the B/C corner and the fire extended into a bathroom. FC1 instructed his crew to close the bathroom door in order to isolate the fire. Conditions in the house declined to the point of becoming unsurvivable as the interior became charged with smoke. FC1 directed his crew to prepare for a fire shelter deployment. Handcrew 1 exited the house.

FC1 selected a deployment site adjacent to an area they previously burned out while prepping the structure. There was minimal vegetation downslope of their location. FC1 instructed the handcrew to deploy their shelters and obtained accountability of the crew. He then radioed the Strike Team leader and Division Group Supervisor. FC1 told them they were deploying fire shelters and he had accountability for the crew. Three crew members did not have their fire shelters with them so they doubled up with other crew members during the deployment. For approximately the next five minutes, the handcrew remained in their fire shelters while experiencing extreme heat and dense smoke. During this time, FC1 was able to keep the handcrew firefighters calm despite their expressed desire to get up and flee from the heat and smoke.

As soon as the fire front passed, the Division Group Supervisor, two Fire Engines, Chief Officer and the Crew Strike Team Leader arrived in the area of Handcrew 1's location. At approximately 1:40 PM, the Division Group Supervisor and the two Fire Engines made it up the driveway while the remaining vehicles staged below. The crew members got up, but remained low to the ground and used their fire shelters as shields against the radiant heat as they walked to the responding vehicles. Handcrew 1 loaded up into the Division Group Supervisor's pickup truck and one of the fire engines, along with their fire shelters, and were driven back down the driveway where they met the other responding resources. They were promptly driven out of the area to a safer location and evaluated for injuries. FC1 and the Swamper were transported to a local hospital for evaluation. Both suffered from smoke inhalation and FC1 received minor burns to his legs. Both were discharged from the hospital that same day. FC1 received follow up treatment at a burn center. The ECT, house and appurtenant structures were destroyed.

INJURIES/DAMAGES

- FC1 sustained minor burns to his legs and was evaluated for smoke inhalation.
- The Swamper was evaluated for smoke inhalation.
- The CAL FIRE ECT was destroyed by the fire.

SAFETY ISSUES FOR REVIEW

- None

INCIDENTAL ISSUES/LESSONS LEARNED

