

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



GREEN SHEET

Firefighter Injuries

October 17, 2017

Bear Fire

17-CA-CZU-007822

17-CA-CZU-008228

California Northern Region

SUMMARY

On Monday, October 16, 2017, at approximately 10:32 p.m., resources were dispatched to the Bear Incident, a vegetation fire on Bear Creek Canyon Road, near the community of Boulder Creek in the unincorporated area of Santa Cruz County, California. While engaged in suppression activities, four firefighters suffered moderate to major injuries. All firefighters were transported to medical facilities for further evaluation and treatment. Three firefighters were treated and released and one was admitted.

CONDITIONS

- **Weather:**
Los Gatos Remote Automated Weather Station, approximately 6.81 miles to the east of the incident location on 10/17/2017 at 4:00 a.m.
 - Temperature: 62° Fahrenheit
 - Relative Humidity: 21% RH
 - Winds: 6 MPH out of the North
 - Visibility: Clear
- **Fuel Type**
Fuel Model 10, Timber: Redwood, mixed conifer, tan oak, and assorted ground litter.
- **Road Conditions**
Single lane, dry dirt road.
- **Topography**
Multiple intersecting drainages with steep slopes.
- **Fire Behavior**
At the time of the accident the fire was approximately 120 acres. It was fuel and topography driven with multiple spot fires and rollout in the understory with isolated tree torching and crown runs.

SEQUENCE OF EVENTS

On Monday, October 16, 2017, at approximately 10:32 p.m., resources were dispatched to a reported structure fire on Bear Creek Canyon Road near the community of Boulder Creek in the unincorporated area of Santa Cruz County, California. The first units arrived at scene at 10:57 p.m. and reported a structure fire with extension to the vegetation, creating two separate vegetation fires of approximately 1 - 2 acres and 2 - 3 acres respectively with structures threatened.

A task force (TF) from CAL FIRE Santa Clara Unit (SCU), consisting of a Type III engine and a utility pickup staffed with one Fire Captain (FC), one Fire Apparatus Engineer (FAE), and six Firefighter I's (FF), was dispatched at approximately 12:35 a.m. on 10/17/2017 and arrived at scene at approximately 1:30 a.m.. At the time of arrival, the fire was estimated to be 50 to 80 acres.

TF reported to Division A (Div A) and was assigned to construct initial hand line in support of a hoselay operation that was being completed by two SCU engines (E1 and E2) in front of a Type I hand crew from CAL FIRE Ben Lomond Conservation

Camp (CRW) with two Fire Captains (FCB1 and FCB2). CRW was tasked with improving and completing the fire control line. FCB2 arrived at approximately 2 a.m. to relieve FCB1. Due to fire activity, FCB1 remained assigned to CRW.

TF bumped ahead of E1, E2 and CRW to continue the initial handline. E1 and E2 continued with the hoselay and the CRW constructed the fire control line. TF, E1 and E2 reached the first of two steep drainages where the hoselay was used to descend into the drainage. Two additional engines from a San Luis Obispo Engine Strike Team (E3 and E4) met up with TF, E1 and E2 to assist with the hoselay. E3 and E4 were positioned at the drainage to prevent rollout from occurring. Crews were making good progress until they ran out of hose which caused the line construction to stop until additional hose arrived to support the operation.

Resources on DIV A witnessed a backing fire in steep terrain with rollout, resulting in isolated fire runs in the unburned fuel back to the fireline. TF, E1, E2 and CRW continued to construct line from the first drainage along a spur ridge to the second drainage and assessed the situation. FC, FAE, CRW and E1 discussed the plan and decided to continue with direct and indirect attack based on the favorable winds after consideration of the "Downhill Fireline Construction Checklist". To avoid rolling material, TF worked ahead of CRW in constructing the initial handline and CRW followed up completing the fire control line. While CRW was at the second drainage, FCB1 was notified by an engine company that a log had rolled across the fire control line behind their location. FCB1 assigned a saw team and two scraping tools to go back up the handline to assist with the log that crossed the control line near the first drainage. FCB1 witnessed another log roll past the handline which prompted his decision to use his primary escape route back to the first drainage.

FCB1 reported to DIV A that rollout had caused additional spots fires that were inaccessible. DIV A inquired of FCB1 if they had identified an escape route. FCB1 advised that their escape route would be back up the handline they had constructed. FC heard radio traffic regarding significant rollout, spot fires and falling snags along DIV A. Additional radio traffic reported that CRW, E1, E2, E3 and E4 were pulling back to the engines due to the changing conditions. FAE advised FC from his mid-slope position that the CRW and engines supporting the hoselay were no longer behind them. FC heard another radio transmission that stated, "You need to get out".

FC radioed DIV A and advised that he was not comfortable with the situation and that TF was utilizing their primary escape route along the handline back to the engines. TF had a difficult time climbing back up the slope. When TF reached mid-slope, they realized they had fire in front and behind them which cut off their primary escape route. FC directed TF to go downhill to their secondary escape route to the creek bed. FC was last in line to ensure all personnel were in front of him as they descended to the creek bed. Due to the terrain, personnel got spread out as they descended the escape route. Visibility was poor due to darkness and dust created by personnel descending the slope. Five members of TF met further down the slope on an

outcropping. As FF1 began to move down the steep slope, the ground suddenly gave way under his feet. He yelled as he fell approximately 50 -75 feet down the hillside to the creek below. Simultaneously, FF2 gave out a similar yell and fell down the hillside and landed next to FF1. Both FF1 and FF2 reported no injuries. FF3 had moved forward approximately 10 feet when the ground gave way and he fell. FF1 and FF2 heard and witnessed FF3 fall down the hill and collide with a rock at the creek bed. FF1 and FF2 pulled FF3 from the water and began assessing for injuries. Simultaneously, FF4 slipped and grabbed a branch that held until he tried to pull himself up and the branch broke. He slid down the hill and reported no injuries. FF5 had already committed to the same path of travel as the other firefighters and slid down the hill reporting an injury to his knee.

FC and FAE heard the yells as firefighters were sliding and falling down the hillside to the creek bed. FF3 stated he was injured and FF1 and FF2 confirmed FF3 was injured and needed assistance. FC radioed "Emergency Traffic, Firefighter Down" to DIV A and initiated "Incident Within an Incident" protocol. FC, FAE and FF6 navigated their way down the hill without injury, taking an alternate route to the creek bed. Upon reaching the creek bed, FC confirmed the injuries to the firefighters and instructed FAE and FF1 to go downstream to alert resources to assist. FF2 and FF4 created a make-shift harness from FF3's chainsaw chaps and web gear to carry FF3 to an extraction point. While assessing FF3, FF2 deflected a falling rock with his arm to shield FF3 from further injury, resulting in a broken arm. FAE and FF1 observed the flashing amber lights of Operation's vehicle approximately 175 feet downstream on Bear Creek Canyon Road. DIV A advised that several engines and a hand crew were setting up a low angle rescue system at the extraction point for the injured firefighters.

Approximately half way to the extraction point, TF was met by paramedics with a backboard. FF3 was placed and secured to the backboard and carried to the extraction point where he was placed in a stokes litter and raised to the road surface on Bear Creek Canyon Road. He was then airlifted to a local trauma center. During the extraction, a rock was dislodged and struck the hand of FF4, causing injury to his hand. The remaining TF members were raised to the road surface and the injured firefighters were transported to a local hospital for treatment.

INJURIES/DAMAGES

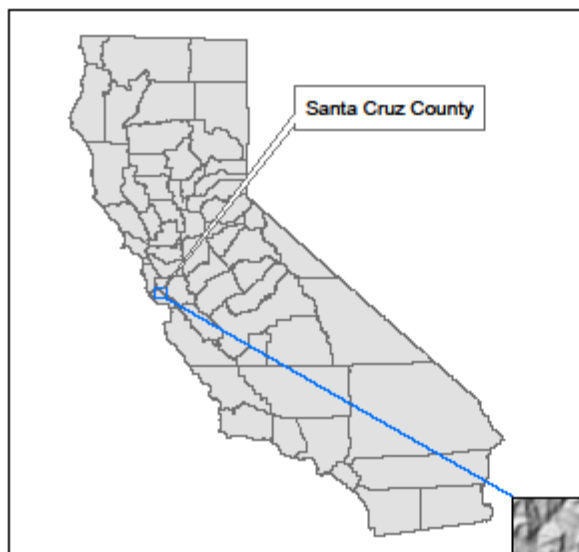
- FF2 suffered a broken arm.
- FF3 suffered multiple facial fractures, a forearm fracture, and facial lacerations.
- FF4 suffered a broken hand.
- FF5 suffered a knee injury.

SAFETY ISSUES FOR REVIEW

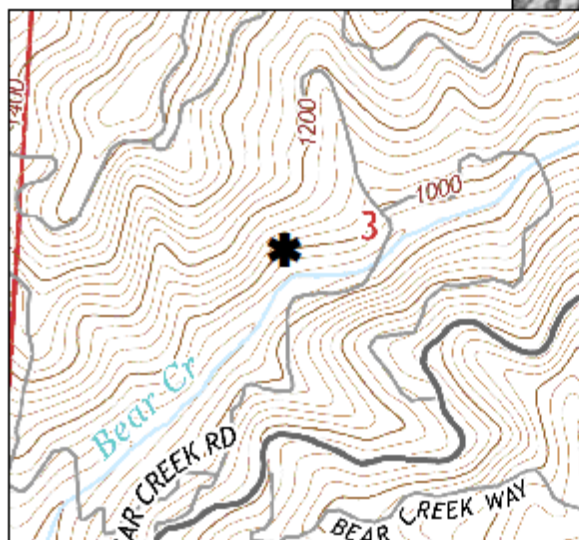
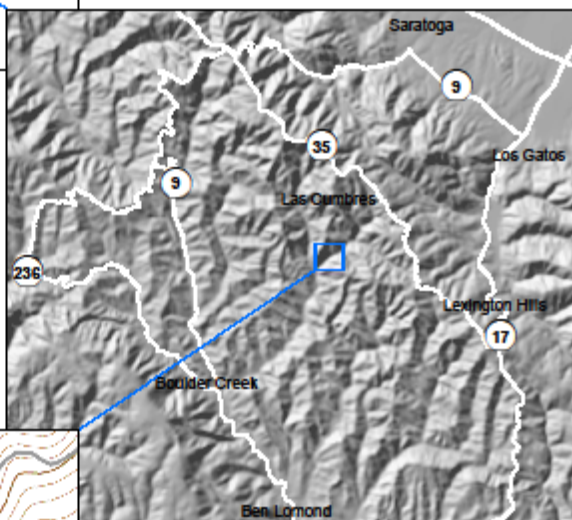
- Utilize L.C.E.S. when engaged in firefighting operations:
 - Establish lookouts and maintain accountability at all times.
 - Ensure that your escape routes/safety zones are scouted and clearly identified.
 - Maintain prompt communication with crews and adjoining forces.
- Recognize hazardous situations and anticipate the unexpected:
 - Working on steep slopes with unstable terrain that makes travel difficult or hazardous.
 - Terrain not seen in daylight.
 - Rollout due to terrain.
 - Frequent spot fires below the line.
 - Shifting trees, boulders, and rocks on mountainous terrain due to fire activity.
 - The effects of fatigue or exertion.
- Review the Downhill Fireline Construction Checklist.


INCIDENTAL ISSUES/LESSONS LEARNED

- Ensure communications are clear and are based on current and changing conditions.
- Communicate conditions that warrant a change in strategy/tactics to all crews and adjoining forces.
- Continually evaluate and reevaluate tactics based on changing fire behavior and terrain.
- Use risk analysis and trigger points.
- Base your plan according to available lookouts.
- Consider utilizing a minimum of two identified escape routes.
- Once escape routes are identified, they should be scouted out to ensure viability.



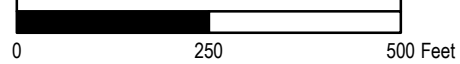
Bear Fire - 17CACZU007822
After Accident Review
Vicinity Map



 Accident Location

Bear Fire - 17CACZU007822
After Accident Review
Scene Diagram

Not to survey accuracy - All locations are approximate



1:3,000

