

GREEN SHEET

California Department of Forestry and Fire Protection

Informational Summary Report of Serious CDF Injuries, Illnesses, Accidents and Near-Miss Incidents



San Benito-Monterey Unit Bulldozer Rollover Fatality

October 8, 2007

**Colorado Incident
CA-BEU-004103**

Accident Incident CA-BEU-004112

Accident Review Incident CA-CSR-000098

California Southern Region

A Board of Review has not approved this Summary Report. It is intended as a safety and training tool, an aid to preventing future occurrences, and to inform interested parties. Because it is published within a short time frame, the information contained herein is subject to revision as further investigation is conducted and additional information is developed.

SUMMARY

The following information is the preliminary account of a bulldozer rollover which occurred during a structure/wildland fire that was reported on Monday, October 8, 2007, at 12:42 PM in Monterey County south of Carmel. A CAL FIRE Heavy Fire Equipment Operator (HFEO) suffered fatal injuries and Dozer 4641 sustained major damage.

CONDITIONS

Location:

The incident occurred 2 miles east of Highway 1 on Palo Colorado Canyon Road, 11 miles south of Carmel, California. The fire was on private property in State Responsibility Area.

Accident Site:

The accident site was a drainage branching north of Palo Colorado Canyon Road, about one mile north of the Mid Coast Fire Brigade Station.

Fuel Type:

The fuels within the area represent native California chaparral 3' – 7' in height. The fuel types are USDA Forest Service Class 142 and 145, moderate to high load, dry climate shrub.

Fuel Continuity: The fuels were continuous as part of a moderately dense fuel stand.

Dead Fuel Moisture: 7% (10-hour fuels, Big Sur RAWS)

Weather Observations: 1:07 PM from Hastings RAWS Station (30 mi. SE Carmel)

Temperature: 87 degrees F

Relative Humidity: 13%

Winds: 3 MPH from West/Southwest, gusts to 16 MPH

Rainfall:

July 1 to October 8, 2007, .31 Big Sur RAWS; 1.03 Hastings RAWS

Topography:

The area of the burn and accident site was steep ranging from 42% to an extreme of 94%. The pitch of the constructed fire line was 62% near the accident site. The side slope near the accident site was 83% to 94%.

SEQUENCE OF EVENTS

On October 8, 2007, at 12:42 PM, CAL FIRE's San Benito-Monterey Unit Emergency Command Center (ECC) received a report of a structure fire in the wildland. The fire was on Palo Colorado Canyon Road east of Highway 1. Initial attack resources, including Transport/Dozer (T/D) 4641 (Monterey) were dispatched. The dispatch was augmented from a medium to a high dispatch due to local knowledge of the area (high dispatch included T/D 4645 Hollister).

At 1:02 PM, the IC (Prevention 4627) arrived and reported approximately two acres of vegetation, 1.8 miles east of Highway 1, with the fire half-way up the ridge and backing into the canyon. T/D 4641 requested information regarding best access to the fire.

At 1:10 PM, the IC reported the structure 70% destroyed and 5 acres of vegetation involved. Air Attack 460 reported the fire was on the western aspect, with a steep slope and was approximately four acres with a potential growth to 50 acres. He requested two additional airtankers and one helicopter.

At 1:18 PM, Battalion 4609 requested three additional strike teams of crews and two strike teams of engines; Battalion 4609 assumed Colorado IC.

At 1:25 PM, Battalion 4609 requested three additional bulldozers. T/D 4641 reported he was in the area, and switched to the tactical frequency.

T/D 4641 unloaded his dozer at the Mid Coast Fire Brigade Station on Palo Colorado Canyon Road. A local resident directed him to access the fire via Green Ridge Road. He traveled on Green Ridge Road approximately 1.5 miles to the top of the ridge and headed west .75 miles along the ridge top to the head of the fire. Dozer 4641 constructed direct line westerly, across the head of the fire (Division "M").

At 1:58 PM, T/D 4645 notified the Emergency Command Center that he was in the area. Dozer 4645 unloaded on Palo Colorado Canyon Road and accessed the fire via King Road to Ray Ridge Road. Along the route, Dozer 4645 met Division "M" (B-4607), who directed him to proceed east and tie in with Dozer 4641. Both dozers were assigned to improve line along the head of the fire and proceed down Division "S" (spur ridge). When the dozers met, they proceeded down Division "S" (right flank) constructing direct line, with Dozer 4641 in the lead. The slope at the top of Division "S" (spur ridge) was calculated to be approximately 64%. As they continued cutting direct line along the edge of the fire, the side hill was approximately 83%; the pitch of the constructed line the dozers were cutting was 62%. The prevailing ridge line (spur ridge) along Division "S" varied in slope from 64% to 85% and tapered to 42% midway down the slope.

At 2:07 PM, Colorado Air Attack advised the IC the fire had grown to 30 acres.

During line construction, Dozer 4641 created a berm/windrow of cut material. Dozer 4645 had to move the berm/windrow to continue down the line. Dozer 4645 communicated his difficulty to Dozer 4641 and requested that Dozer 4641 straighten his blade. Dozer 4641 acknowledged Dozer 4645's request and continued down the slope until Dozer 4645 lost sight of him due to the topography.

As Dozer 4645 continued downhill along the constructed dozer line, Dozer 4645 began sliding and stopped because he could no longer safely move due to terrain and loose soil conditions. The operator pushed his blade down for safety and exited the cab.

Dozer 4641 continued down the spur ridge cutting fire line out of sight of Dozer 4645. Dozer 4645 notified Dozer 4641 that he was stuck and would need assistance getting out. Dozer 4641 was committed to a steep downhill stretch and was unable to back up and would need to go all the way down and back around to the top of the ridge (via Ray Ridge Road). Dozer 4641 stopped and requested assistance from ground resources and waited for a person on the ground to help guide him the last approximately 600 feet of the 94 % plus slope.

Dozer 4641 was on his way back through Division "M"; he met face to face with Division "M" on Ray Ridge Road. They discussed the hazards of safely pulling Dozer 4645 back onto the crest of the ridge. The Operator of Dozer 4641 told Division "M" that taking both dozers down through the bottom of Division "S" was not an option, as it was too steep.

Dozer 4641 came to Division "S" and met with Dozer 4645. They developed a plan to build a bench below Dozer 4645 and use another dozer to winch Dozer 4645 to the bench. Dozer 4641 would construct the bench and requested two additional dozers with winches from Division "M". While waiting for the additional dozers to arrive, Dozer 4641 proceeded down the spur ridge approximately 100 feet past Dozer 4645 and turned around facing towards Dozer 4645. Dozer 4641 began constructing the bench to solid ground and was pushing slough material, some of which went over the side. The Operator of Dozer 4645 positioned himself 15 to 20 feet behind Dozer 4641, to watch the operation. On Dozer 4641's second pass, the fill slipped out from underneath the right track at the outer edge of the cut, causing the right track to fall approximately two feet. Dozer 4641 stopped; moments later the back-up alarm activated, the RPM's increased, and the dozer tracks began to move. Dozer 4641 tipped to the right side then rolled 154 feet down an 83% to 94% slope into a steep drainage where it came to rest. The Operator from Dozer 4645 went down to Dozer 4641 and assessed the need for medical assistance and rescue, then returned to his dozer and notified Division "M" of the accident by radio. Helitack personnel from Copter 106 and Copter 406, who were working on "M", quickly went to the scene and provided extrication and immediate medical assistance to the operator of Dozer 4641.

At 4:34 PM, the IC advised ECC of the dozer rollover and requested an air ambulance. Arrangements were made to transport CAL FIRE paramedics and Advanced Life Support (ALS) equipment from Medic Engine 1681 that was on the fire. Copter 406 transported two paramedics to the scene while Copter 106 prepared for a short-haul

rescue. Upon the paramedics' arrival, they assessed and provided ALS care to the Operator of Dozer 4641. CalStar 7 landed at a designated landing zone and stood by for the patient transfer to the hospital.

Copter 106 performed the short haul rescue and transferred the Operator to CalStar 7.

At approximately 6:33 PM, CalStar 7 lifted off and transported the Operator to the San Jose Regional Medical Center where he succumbed to his injuries on October 9, 2007 at 8:55 AM.

INJURIES/DAMAGES

T/D 4641 HFEO succumbed to fatal injuries. Dozer sustained major damage.

SAFETY ISSUES FOR REVIEW

1. The coordinated effort and prior training of air and ground resources contributed to the expedient rescue and best medical care possible for the Operator. Train continually, muscle memory counts.
2. All firefighters should maintain situational awareness and review the special hazards of working in unfamiliar areas, steep terrain, and diverse soil types.
3. Only necessary items should be carried in personnel compartments of vehicles, including bulldozers. All items in the cab should be properly secured or mounted.
4. Full PPE shall be worn while working along the fire line or in hazardous areas.
5. All personnel need to be trained on specific characteristics and limitations of each piece of equipment to which they might be assigned.
6. All operators must have portable radios immediately available and/or with them to maintain prompt communications when they leave their assigned vehicles on the fire line.
7. Fires need to be scouted and all personnel need to understand the fire's orientation; i.e., origin/heel, flanks, head, and divisions.
8. Division supervisors need to initiate and maintain communications with their assigned resources.

INCIDENTAL ISSUES FOR REVIEW

Not yet identified.



