

California Department of Forestry and Fire Protection

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



Engine Crew Entrapment, Fatality, and Burn Injuries

October 29, 2003

**Cedar Fire
CACNF-003056
CACSR-000132**

Southern Region

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REVIEW TEAM PROCESS

I was contacted by Northern Region Chief Dave Driscoll on the afternoon of October 29, 2003 at 3:20 p.m. and advised of a fire fighter fatality on the Cedar Fire in the San Diego Unit. Chief Driscoll contacted me at 4:05 p.m. the same day to confirm my assignment as the Team Leader for the Accident Review Team. I was instructed to report to Monte Vista Headquarters the next afternoon.

While enroute I was in contact with Chief Fred McVay who was assigned to act as liaison between the Southern Region and myself. Chief McVay and I scheduled a briefing for the Accident Review Team at Monte Vista Headquarters for 6:00 p.m. on October 30, 2003.

Chief Alan Stovall was assigned as the Agency Administrator for the Accident Review Team and he and I facilitated the ordering and deployment of the review team members while enroute.

At 3:00 p.m. on October 30, 2003 I was provided an administrator's briefing from Chief Stovall and Southern Region Chief Tim Turner. This included the jurisdictional authority, review scope, report format, reporting relationships and requirements, time frames, and team composition.

Chief Henri Brachais was assigned as the liaison between Incident Command Team #5 and the review team to facilitate access to necessary documents and personnel. Deputy Chief Jim Barta was assigned as the liaison between the Accident Review Team and San Diego Unit. San Diego Unit provided a Fire Captain to assist with logistical support.

At 6:00 p.m. on October 30, 2003 a briefing was provided to the Accident Review Team at Monte Vista Headquarters training room. This included a summary by Incident Command Team #5 Safety Officer John Simon of the immediate post accident events. Chief Simon also provided documents and maps that were cataloged and a transfer of custody was made to the review team.

At 7:05 p.m. on October 30, 2003 I met with representatives from Federal OSHA and Cal OSHA. We discussed our review process, information available at the time, and made arrangements for them to visit the accident site with members from the Review Team.

An initial team meeting was held at 8:40 p.m. hours on October 30, 2003 with the following items discussed:

- Team member roles and responsibilities.
- Logistical support needs and processes.
- The confidentiality and chain of custody requirements.
- Required reports and time frames.
- Priority task listing.
- Team meeting schedule – twice daily

The team moved to the Hilton Hotel in San Diego where a meeting room and lodging were provided. This remained as the team's central point of operation through November 9, 2003.

The team was reconvened on November 18-20 at the CDF Northern Region Operations Center in Redding. This meeting was to follow up on action items, continue reviewing the collected data, and work on the elements of the report. At the conclusion of this meeting team members were assigned to draft specific elements of the report. The team met again December 15-16 at the CDF Northern Region Operations Center in Redding. This meeting was to review the draft elements of the report and follow up on action items. The team met again on January 20-22, 2004 at the CDF Northern Region Operations Center in Redding. This meeting was to review and conduct technical edit of report elements, develop final listing for graphics products, and begin assembling the report. During February 2004 team members with responsibility for specific products convened at various venues to complete those products.

In the period between the team meetings members worked on assigned action items and report elements.

The information used in assembling this report was collected through a variety of processes including site observations, witness statements (written), witness interviews (taped / transcribed), aerial photographs, collection of records and historical data, and obtaining photographs and videos taken before, during, and after the incident.

As needed, technical experts were solicited to assist the team. This included stenographic / transcription services, digital mapping and survey, medical opinions, fire weather and fire behavior modeling.

All items (written documentation, tapes, photographs, physical evidence) collected were cataloged and a chain of custody was maintained. Field notes once transferred to supplemental reports and cataloged were destroyed. Sensitive data not pertinent to the report (i.e. - forensic photographs) were sealed and stored along with the physical evidence. Copies of non-sensitive data not pertinent to the report (i.e. - personal photographs) were returned to the owner.

The following reports were generated and submitted by the Review Team: The Preliminary Summary Report (Blue Sheet) was provided to the Agency Administrator at 5:40 p.m. on October 31. The Informational Summary Report (Green Sheet) was provided to the Agency Administrator at 5:01 p.m. on November 7. The Review Report, supporting data, and supplemental information were provided to the Agency Administrator on March 10, 2004.

Submitted by Ken McLean, Review Team Leader

Review Team Membership:

Team Member	Agency	Assignment	Address
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Frank Kemper	California Department of Forestry and Fire Protection	G.I.S. Technical Specialist	135 Ridgeway Ave Santa Rosa, CA. 95401
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OVERVIEW OF ACCIDENT

On October 21, 2003 a series of fires began in Southern California that would eventually burn nearly 750,000 acres in six counties. These fires resulted in 20 fatalities (19 civilian and one fire service), 183 injuries to responding personnel, and destroyed over 3,500 residential structures. This fire siege created the largest mobilization of fire fighting resources in California history. At the peak of the mobilization there were over 16,000 personnel including 1,600 engine companies, nearly 300 fire crews, and over 160 aircraft assigned to the fires.

In the early evening of October 25, the Cedar Fire started in San Diego County. The fire, initially burning under a Santa Ana Wind condition eventually consumed 280,278 acres and destroyed 2,232 structures, 22 commercial buildings, and 566 outbuildings, damaging another 53 structures and 10 outbuildings. There was one fire fighter fatality, 13 civilian fatalities and 107 injuries.

On the evening of October 27 Novato Fire District Engine 6162, staffed with a crew of four (Captain, two Engineers, and a Fire Fighter/Paramedic) responded, along with three other engines, to the Cedar Fire as part of Task Force XAL-2005A. Once at the Cedar Fire a fifth engine was added and XAL-2005A was designated as a Strike Team.

The morning of October 29 the Cedar Fire was over 230,000 acres, 15% contained, and burning to the east and northeast now under the influence of onshore winds. For the October 29 operational period Strike Team XAL-2005A was assigned to Branch 3 / Division I in the Santa Isabel / Wynola area eventually deploying along Orchard Lane. Engine 6162 was assigned to 920 Orchard Lane and prepared to defend the residence at that location.

Shortly after noon the fire, that had crossed Highway 78/79 early in the morning, increased in intensity and overran the crew of Engine 6162 resulting in fatal injuries to Engineer Steven Rucker, serious burn injuries to Captain Doug McDonald, and minor burn injuries to Engineer Shawn Kreps and Fire Fighter/Paramedic Barrett Smith. During the burn over Engineer Kreps and Fire Fighter/Paramedic Smith were able to take refuge in the residence. After his attempts to assist Engineer Rucker were unsuccessful Captain McDonald, now seriously burned, was assisted into the residence by Engineer Kreps and Fire Fighter/Paramedic Smith.

Following the burn over Engineer Kreps and Fire Fighter/Paramedic Smith were able to assist Captain McDonald to the engine. Engineer Kreps then drove the engine from the accident site to the intersection of Highway 78/79 and Orchard Lane where medical treatment was provided. The injured personnel were then airlifted to the University of San Diego Burn Center.

There were also several near misses along Orchard Lane as resources at 902 Orchard and 1038 Orchard had their escape routes cut off by fire. They were eventually able to retreat without any injuries or damage to equipment.

SUMMARY OF EVENTS

The evening of October 28, 2003 a decision is made and direction is given to fire-out along Highway 78/79 from Pine Hills Road to Santa Ysabel, approximately seven miles, to keep the fire south of the Highway. The firing operation continues throughout the night eventually being completed to the Inaja Memorial at about 6:00 a.m. on October 29. There are some delays in the operation as it extends into and through the San Diego River drainage due to concerns about the fire already in the canyon, however the firing operation to the Memorial holds and the line is secure. As the firing operation continues from the Inaja Memorial toward Santa Ysabel it is terminated after about 20 minutes and extinguished by the assigned resources due to unsettled conditions. No attempts are made to re-initiate the firing operation. The main fire eventually comes out of the canyon and at approximately 9:00 to 9:15 a.m. jumps Highway 78/79 at this location.

The morning of October 29, 2003 Jim Watkins, the Strike Team Leader for XAL-2005A attends the operational period briefing at the Incident Base in El Cajon. That briefing includes a discussion of the general weather forecast, previously exhibited fire behavior, and the need to identify specific hazards and mitigations. Strike Team Leader Watkins learns they will be assigned to Branch III, Division I and briefly meets with the assigned Division Supervisor, Dan Runnestrand. He then briefs the strike team telling them of the assignment and passing on safety information. The strike team then proceeds to a staging area in Santa Ysabel where they meet up with Division Supervisor Runnestrand and receive further instructions.

At about 8:30 a.m. Air Tactical Group Supervisor (ATGS) Ray Saucedo is on scene and assigned to Branch III along with three fixed wing air tankers. There is a request for helicopters which are still at the helibase. ATGS Saucedo is unable to contact ground resources and believes there may be a problem with the communication plan. He returns all aircraft to base and holds the helicopters on the ground until the communication issue is resolved. At some time between 9:00 a.m. and 10:00 a.m., ATGS Saucedo returns to Branch III.

Shortly after 9:00 a.m. the ground resources assigned in the area of the Inaja Memorial attempt to contain the fire that jumps the highway but due to erratic fire behavior, they disengage. This fire continues to burn to the north along the ridge on the west side of the San Diego River north of Highway 78/79. Plans are then developed to use bulldozers to work the west flank of the slope-over.

It is at about this time that Division Supervisor Runnestrand meets with Strike Team Leader Watkins in Santa Ysabel and briefs him on the fire activity the day before, what was going on during the current day, and what to expect.

At about 9:30 a.m. discussion between Branch III Director Ray Chaney and Division Supervisor Runnestrand leads to a plan to deploy resources to the south flank of the fire and go with direct suppression tactics.

At about 10:20 a.m. Strike Team XAL-2005A, including Engine 6162, is assigned to do structure protection in Riverwood Estates. When Engine 6162 arrives at Riverwood Estates the structures have been fired-out around and mop-up operations are occurring. They describe the fire in that area as calm and can see the fire burning past them to the west across the highway. Strike Team Leader Watkins describes this fire as being pushed slowly by the wind with the column going up about 1000 feet then bending over them to the east. After assigning the engines in Strike Team XAL-2005A, Strike Team Leader Watkins meets up with an additional strike team, 2004A that had arrived in the Riverwood Estates area. He then starts out to the highway to recon the area and locate Division Supervisor Runnestrand whom he cannot contact on the radio.

At about 11:00 a.m. Deputy Branch III Director Mike Wakoski meets with Division Supervisor Runnestrand to develop a plan to re-allocate resources to contain the slop over north of the highway. This includes re-assigning the bulldozers from the west flank to the east flank. Strike Team Leader Watkins finds Division Supervisor Runnestrand on Highway 78/79 and advises him of the arrival of the additional strike team. It is at this time that Division Supervisor Runnestrand directs Strike Team Leader Watkins to move his strike team to Orchard Lane.

By about 11:35 a.m. several helicopters arrive and begin making bucket drops along a dirt road on the east side of the San Diego River (dry at this time) just north of where Highway 78/79 crosses the river. The objective of this action is to keep the fire on the west side of the river drainage and away from structures in the area. The helicopters are directed by the ATGS to choose their own targets with the priority to protect structures.

Meanwhile the fire on the west side of the drainage has moved up canyon and gained elevation. Coming under the influence of the westerly wind the fire higher up the drainage spreads toward the northeast burning to and past the northeast corner of the northernmost property on Orchard Lane (902 Orchard Lane). The fire is now established on the eastern side of the drainage in a hooking move to the northeast.

Strike Team XAL-2005A groups up and begins to move toward Orchard Lane. At about 11:45 a.m. Strike Team Leader Watkins drives north on Orchard Lane while the strike team stages at the intersection of Orchard Lane and Highway 78/79. Strike Team Leader Watkins can see the fire at the north end of Orchard and realizing it is a long road, he calls back for the strike team to start moving up.

Approximately 11:50 a.m. the pilot of Helicopter 523EH, working in the bottom of the canyon near the highway, notices spot fires around the structure at 902 Orchard and advises the ATGS. The helicopter operation is then moved to the ridge on the east side of the drainage to protect houses along Orchard Lane.

About the same time Strike Team XAL-2005A arrives near 915 Orchard Lane, Strike Team Watkins begins to size-up structures along Orchard Lane, beginning with the northernmost structure at 902 Orchard Lane, while the strike team stages along Orchard Lane.

Also arriving at approximately 11:50 a.m., are Fire Captain (FC) John Childe and Fire Apparatus Engineer (FAE) Isaac Sanchez in Utility 3334. They are not assigned to the division, or the incident, but have been in the area most of the morning scouting and offering suggestions on potential firing operations to Division Supervisor Runnestrand. Also arriving at Orchard Lane are two bulldozers, one from Los Angeles County and one from Los Angeles City, who off-load near Orchard Lane and the highway and begin “walking” north through the meadow to the east of Orchard Lane.

Strike Team Leader Watkins finishes assessing the structures and begins assigning engines. He does not assign an engine to the residence at 902 Orchard due to narrow access and too much preparation needed to defend the structure. Engine 6162 is assigned to the residence at 920 Orchard and begins backing up the cement driveway at that location. Engine 1541 is assigned to 915 Orchard which is a metal farm building said to contain pesticides. He does not assign an engine to 930 Orchard as he determines it to be too risky. This grouping of structures is directly across a saddle from the residence at 920 Orchard. Engine 24 is assigned to the residence at 1038 Orchard and due to the long driveway, 1126 Orchard Lane is skipped. Engine 71 is assigned to the next residence south of 1126 Orchard Lane. Engine 334 remains unassigned and is staged along Orchard Lane.

As the engines are deploying to their assigned locations FC Childe and FAE Sanchez drive north past the engines eventually arriving at 902 Orchard. At this location FC Childe observes the fire has burned past that location and the fire is now flanking across the slope to the southwest. Based on this observation he instructs FAE Sanchez to begin firing out around the structure. While FAE Sanchez is firing out FC Childe returns to Orchard Lane in Utility 3334 and instructs Engine 334 to go up to the structure at 902 Orchard and support the firing operation. The crew of Engine 334, believing that FC Childe had coordinated with Strike Team Leader Watkins calls Watkins on the radio to advise of the assignment. Strike Team Leader Watkins, believing FC Childe would be there coordinating the operation, gave Engine 334 the OK to proceed with the assignment. It is after this that he sees FC Childe back down on Orchard Lane.

At about this time the El Cariso Hot Shots and the two bulldozers arrive at the north end of Orchard Lane. One of the bulldozers and part of the hot shot crew start working near 902 Orchard and begin direct perimeter control in that area.

At 920 Orchard the crew of Engine 6162 are backing the engine up the driveway and using a chainsaw to clear brush to prevent scratching the engine. Captain McDonald on Engine 6162 went ahead of the engine to assess the situation. From a location near the 90 degree bend in the driveway below the garage he looks towards the residence and has concerns about the site conditions. He contacts Strike Team Leader Watkins who advises him to come out if he is not comfortable. Captain McDonald and two crew members, Engineer Rucker and Fire Fighter/Paramedic Smith, return up the driveway to re-assess. Near the top of the driveway they see a flanking fire to the north near 902 Orchard and determine it to be the threat. After walking past the residence to the end of the driveway they see that the brush had been cleared to the west

of the residence for a distance of about 150 feet. Because of the clearance they can see west across the San Diego River drainage however, tall brush and drifting smoke restrict visibility to the southwest. At this time the decision is made to stay and defend the residence.

After Engine 6162 arrives at the top of the driveway at 920 Orchard, Captain McDonald conducts a briefing with the crew. The engine is spotted and the crew begins preparing to defend the structure. This includes placing an axe at the rear door of the structure (which has been identified as a refuge), placing a chain saw on the cement patio after clearing some brush, laddering the building (using the homeowner's ladder), deploying and charging two 100 foot long, one and one-half inch hose lines, and charging the front bumper line to use for engine protection should they need to drive out to the meadow (which was discussed as a safety zone). The prominent fire at this time is still the flanking fire from the north near 902 Orchard. The crew does notice a seven to 10 mile per hour wind blowing from the southwest.

FAE Sanchez completes firing around the west side of the residence at 902 Orchard and returns to find FC Childe and the utility gone. He starts down toward Orchard Lane and sees Engine 334 coming up the driveway. He returns to 902 Orchard where he is later joined by FC Childe. With FAE Sanchez in the rear of the utility FC Childe drives out to Orchard Lane and proceeds south to and up the driveway at 930 Orchard. Just prior to their arrival at 930 Orchard Strike Team Leader Watkins had returned to re-evaluate placing an engine there. Once at 930 Orchard, FC Childe instructs FAE Sanchez to fire-out, which he does in an arc from south to north about 100 to 150 feet along the west of the structures. FC Childe then instructs FAE Sanchez to take a line of fire to the next house to the north (which is 920 Orchard where Engine 6162 is deployed). The firing operation quickly generates fire spread to the east, which at one point is knocked down by a helicopter bucket drop, and FAE Sanchez discontinues firing to the north.

FC Childe and FAE Sanchez then proceed back down to Orchard Lane and up the driveway at 920 Orchard. They park in the area of the 90 degree turn in the driveway below the garage. FC Childe instructs FAE Sanchez to take fire from this point north toward the driveway and unimproved building site at 914 Orchard. Captain McDonald sees this from the top of the driveway near the residence. Captain McDonald and FC Childe do not make contact and Captain McDonald returns to his crew before FC Childe leaves.

Captain McDonald returns to the crew who are continuing to prepare the structure by removing more brush and burning brush piles. One pile is near the front of the engine and the heat prompts them to back the engine further south down the drive way. Captain McDonald advises the crew a CDF fire fighter is burning out near the garage and then instructs the crew to burn out the grass below the driveway. Engineer Kreps walks north down the driveway to the garage and observes fire already on the ground behind the garage and in the brush to the north. He begins strip-firing from that location south along the edge of the driveway. Captain McDonald throws fusees down slope to the west into the heavy brush below the strip-firing.

The Superintendent of the El Cariso Hot Shots, who is in the meadow east of Orchard Lane, has been observing unexplained fire on the ridge. The first fire he sees is between 930 and 920

Orchard, then he sees more fire between 920 and 902 Orchard. He contacts his crew twice to see if they are firing-out. After the second time they tell him they're not firing, he directs them to come off the ridge and return to his location.

As FAE Sanchez continues firing to the north, FC Childe returns down the driveway of 920 to Orchard Lane where he contacts Strike Team Leader Watkins. FC Childe asks Strike Team Leader Watkins why he does not have an engine at the residence at 920 Orchard. He states that he does and now concerned about the disposition of Engine 6162, he proceeds up the driveway to 920 Orchard. It was at about 12:35 p.m. that he met up with the crew of Engine 6162 and discussed their progress. Strike Team Leader Watkins observes the crew conducting their strip burn and sees they are about to throw fusees into the brush. He also observes the fire is backing down from the north and is about 300 yards from the house. The sky overhead is clear and winds are moderate up-canyon / up-slope.

After confirming the disposition of Engine 6162 Strike Team Leader Watkins proceeds back to Orchard Lane when he is contacted by Engine 334 at 902 Orchard. Engine 334 states their egress has been cut off by spotting from a firing operation. He tries to move to their location but is cut off by a dozer working in that area.

FC Childe and FAE Sanchez meet up and proceed down Orchard Lane to 1038 Orchard where Engine 24 is deployed. They begin firing-out at that location. The crew of Engine 24 states that prior to the firing operation there is little or no wind and no sign of the fire being close. The crew reports the firing operation spreads to the brush and ignites an outbuilding. The fire intensifies and crosses over the driveway cutting off their egress. This fire then encircles their location and the wind changes direction and becomes erratic.

At about this time and shortly after, resources along Orchard Lane notice a change in conditions and fire activity. Within about eight minutes of Strike Team Leader Watkins departure, the crew of Engine 6162 notices the fire activity increase below them. Strike Team Leader Watkins notices the fire picking up but he still believes it to be coming from the northwest. He can also begin to hear the fire.

Los Angeles County dozer operator Jeff Vidrinskis is notified by his transport operator, located at Highway 78/79 and Orchard Lane, that the fire is getting very active. Vidrinskis is working in a westerly/southwesterly direction downhill from 902 Orchard in a flanking action. Within a few minutes of the message from the transport operator he pushes over a tree. As he does this he observes a wall of fire in front of him. It is described as 100 feet tall and 300 yards wide. He abandons his line construction and returns to 902 Orchard.

The crew of Engine 6162, noticing the increase in fire intensity, gathers at the engine and moves to the passenger side away from the radiant heat. Fire Fighter/Paramedic Smith staffs a one and one-half inch hose line at the front passenger side of the engine. Engineer Rucker staffs a similar hose line at the rear passenger side of the engine. Engineer Kreps is standing at the right rear duals with his back to the engine. The exact location of Captain McDonald is not clear but Smith

and Kreps place him somewhere near the rear of the engine. Captain McDonald believes he was between Smith and Kreps.

Fire Fighter/Paramedic Smith notices embers have ignited juniper bushes along the cement patio and he attempts to extinguish them. All members of the crew state that at this time the conditions deteriorate rapidly. The sky becomes dark and orange, winds increase and heat intensity increases dramatically, a constant stream of embers are going past the engine, and the sound of the fire increases (described by Engineer Kreps as “the freight train coming”).

Winds now increase significantly and a flaming fire front is observed blowing across the driveway in the direction of the garage, cutting off the crew’s egress. It is at this time that Strike Team Leader Watkins observes the fire “blowing through” the area between the ridge north of Engine 6162 and 902 Orchard.

The juniper and boxwood bushes along the patio have now burst into flame. Captain McDonald gives the order for the crew to deploy to the refuge of the house. Fire Fighter/Paramedic Smith immediately drops the hose line and runs in the direction of the raised patio. Immediately upon leaving the protection of the engine he experiences severe thermal conditions. He proceeds to the stairs and leaps past the burning bushes onto the patio. He is followed by Engineer Kreps who runs to the steps, stumbles and falls to his knees at the top of the steps, recovers and continues to retreat to the rear of the house following Fire Fighter/Paramedic Smith. The two continue to the rear door of the house and use the axe and their feet to force entry into the house.

Captain McDonald and Engineer Rucker are still at the engine. Captain McDonald states that after he sees Fire Fighter/Paramedic Smith and Engineer Kreps move onto the patio Engineer Rucker is still at the rear of the engine. He states that as Rucker starts to move toward the patio he falls down and gets onto his hands and knees and then stands up. He states that Engineer Rucker then turns and faces toward the southeast, maybe even taking a step. Engineer Rucker then turns back, steps towards him, and then turns toward the patio and falls face down into the burning bushes. Captain McDonald then goes to Engineer Rucker, who was already helping himself up, and assists him. Captain McDonald states that Engineer Rucker says “I’m burning up”. Captain McDonald assists Engineer Rucker to the steps with Engineer Rucker making it up the steps onto the patio under his own power with Captain McDonald following.

Partially across the patio Captain McDonald sees Engineer Rucker fall face down. He makes an attempt to get Engineer Rucker up but cannot. Strike Team Leader Watkins heard a “man down” radio call on the tactical channel from Engine 6162 at this time.

Evidence at the scene shows the King hand-held radio from Engine 6162 was on the patio near Engineer Rucker’s body on the side closest to the steps. Captain McDonald was in possession of the radio and though he does not recall making a transmission

Captain McDonald then turns around 180 degrees and attempts to pull Engineer Rucker toward the rear of the house. He calls for the other crew members to help but they cannot hear him.

Feeling himself getting burned he retreats to the rear corner of the house. He then returns to the patio in another attempt to rescue Engineer Rucker. He observes that Engineer Rucker's body is on fire and determines he cannot help him. He returns back behind the house where he is met by Fire Fighter/Paramedic Smith and Engineer Kreps who have come back out of the house to see where Captain McDonald and Engineer Rucker are. Captain McDonald tries to convince them to return for Engineer Rucker. They determine the area is untenable and retreat into the house.

Physical evidence on the patio indicates that Captain McDonald's web gear was failing at the top of the stairs, demonstrating he had already taken significant heat prior to that. There was also evidence of a wildland hose pack on the patio. One length was located approximately three feet from Engineer Rucker's feet and one length was at his head.

Inside the residence Captain McDonald feels he is burning and removes his web gear. He is unable to find the hand-held radio. The decision is made to check the front door to see if they can exit. When the door is opened, intense heat surges through the opening. After a few minutes they try again and Engineer Kreps is able to make it out and down the driveway to the engine. Heat forces him to take refuge in the engine which is still running. Concerned that Fire Fighter/Paramedic Smith and Captain McDonald will come looking for him Engineer Kreps returns to the front door and into the house.

The house is now involved in flame and smoke is banking down to waist level. The decision is made to evacuate and the three make their way out the front door and down the driveway to the engine, Captain McDonald is assisted into the passenger's seat. Engineer Kreps gets into the driver's seat, and after disconnecting the rear hose lines (which burned through emptying the tank) Fire Fighter/Paramedic Smith gets into the right passenger's seat.

Engineer Kreps is eventually able to maneuver the engine through heavy smoke down the driveway and out to Orchard Lane. While moving down the driveway Captain McDonald broadcasts additional information over Command Net.

Once on Orchard Lane the crew proceeds, with one stop, out to the intersection of Orchard Lane and Highway 78/79. They arrive at this location at 1:10 p.m. where they are met by the Plumas Hot Shot Crew. Medical treatment is provided for the crew members. Engineer Kreps and Fire Fighter/Paramedic Smith using equipment on Engine 6162 start I.V.s on Captain McDonald. All three are transported by CDF helicopters to Ramona Airport where they are transferred to Mercy Air Ambulance and transported to UC San Diego.

At 1:11 p.m. USFS Engine 39 arrives at the treatment area and then proceeds to 920 Orchard to conduct a search and rescue. At the base of the driveway to 920 Orchard Engine 39 meets up with Strike Team Leader Watkins. Engine 39 proceeds up to the residence while the Strike Team Leader remains on Orchard Lane. Once at the residence they discover the body and announce an "11-44". Not long afterwards, a propane tank starts venting with flames and all resources leave the area.

Once the tank stops venting USFS Engine 39 and CDF Division Chief Bill Clayton return to the scene. Shortly after this, personnel from the San Diego County Sheriff's Office arrive at the site, secure the scene, and initiate their investigation.

SEQUENCE OF EVENTS

On October 28, 2003, Battalion Chief John Michelini is assigned as the Structure Group Supervisor for the Julian Structure Group. According to Michelini, throughout the day, units are deployed in and around structures south of Highway 78/79. He observes that at about 5:00 p.m., the fire's northern spread has been stopped between Pine Hills Road and Wynola. Open line continues to burn between Wynola Estates and Santa Ysabel below Highway 78/79.¹ By late afternoon, the Cedar Fire, under an onshore wind influence has burned northeast up the San Diego River drainage to just southwest of Highway 78/79.

At about 6:00 p.m., Branch III Director Randy Lyle advises Structure Group Supervisor Michelini that the Command Team wants a black line to be brought down from Pine Hills Road to Santa Ysabel along Highway 78/79. His objective is to fire-out around structures, burn-out islands, and create a control line along Highway 78/79, from Pine Hills Road to Santa Ysabel, a distance of approximately seven miles. Based on this request, Michelini initiates a firing-out operation, which takes most of the night.¹

Strike Team (S/T) Leader Thomas Keating with S/T XST 4205A is assigned the firing-out operation by Structure Group Supervisor Michelini. Michelini tells Keating that the fire is moving towards the Inaja Memorial and that he needs to go "fire-out the canyon so that the fire does not cross Highway 78/79." When S/T Leader Keating arrives at his assignment at Riverwood Road and the Inaja Memorial, he "(feels) uncomfortable with the order to back-fire the canyon."²

S/T Leader Keating notes that the fire is already at the bottom of the canyon but has not burned clean. He requests that Michelini come to his location and confirm what he wants before they put fire on the ground. While waiting for Michelini, Keating is joined by S/T Leader Allen Chandler and Strike Team 1624C. This is a mixed strike team mostly of U.S. Forest Service engines. S/T Leader Chandler tells Keating that he also has concerns about burning out this area.²

Keating discusses the situation with Structure Group Supervisor Michelini, and he and S/T Leader Chandler decide they can safely fire this area out. The firing operation in the area of Highway 78/79 and Riverwood Road begins at about 1:00 a.m. on October 29. Keating observes that the burning-out operation between Riverwood Road and the Inaja Memorial goes well and the fire burns all the way to the bottom of the canyon.²

The firing operation follows Riverwood Road and progresses to where it returns to Highway 78/79 on the west side of the San Diego River. This action leaves an unburned island of fuel between Riverwood Road and Highway 78/79 near the bottom of the San Diego River drainage. The firing then progresses from the Inaja Memorial back towards Riverwood Road, completing this section at about 6:00 a.m. Structure Group Supervisor Michelini notes that all firing-out is completed by 6:00 a.m. with the exception of the area from the Inaja Memorial to Santa Ysabel.¹

S/T Leader Watkins (XAL 2005A) attends the morning briefing at 7:00 a.m. in camp. The Incident Action Plans (IAP) are late in printing and only show up midway through the briefing. Incident Commander John Hawkins and Planning Section Chief Ed Kilmartin conduct the briefing. After roll call, Watkins is told that S/T 2005A is assigned to Branch III, Division I. Chief Hawkins identifies for Watkins the location where he can meet with Division I.³

S/T Leader Watkins meets with Division I, Dan Runnestrand, and is given a brief overview of their assignment. He and his strike team are to meet Runnestrand at Santa Ysabel as soon as possible. Watkins returns to his strike team to find them fully prepared and ready to move out. He conducts a briefing with the strike team, tells them of the assignment and passes on safety information. At about this time, additional King radios have come into the communications unit and the strike team spends time obtaining and re-cloning radios.³

According to Michelini he is contacted by S/T Leader Chandler, USFS S/T 1624C, by 7:00 a.m. and he advises him that they have initiated firing-out from the Inaja Memorial towards Santa Ysabel but have extinguished the firing operation due to unsettled conditions.¹

S/T Leader Keating observes that after about twenty minutes of firing out, S/T Leader Chandler calls a halt to the firing operation. Keating notes that there has been a wind change and the fire is coming out of the canyon faster than they had anticipated. His strike team then leaves the area to seek mechanical repairs.²

Branch Director Ray Chaney meets with Deputy Branch III at Santa Ysabel at about 8:15 a.m. and observes the fire bumping Highway 78/79, near the Inaja Memorial. They advise CHP to close traffic to the area.⁴ By the time Structure Group Supervisor Michelini arrives at the firing-out operation on Highway 78/79, between the Inaja Memorial and Santa Ysabel, S/T 1624C with S/T Leader Chandler and S/T 4205A with S/T Leader Keating, have completely knocked down the back fire and are cleaning up the area.¹ Chandler later tells Keating that after he has left the scene for repairs, the fire “blow(s) over his crew and Highway 78/79.”²

Air Tactical Group Supervisor Ray Saucedo is assigned to Branch III of the Cedar Fire along with three fixed wing air tankers. He is on scene at about 8:30 a.m. He makes a request for helicopters to support ground operations, and then determines that he cannot communicate with the ground resources. This leads him to believe that the communications plan is not in effect with all the resources. He then orders the helicopters to hold on base and tells the fixed wing to return to base until Branch III can confirm they have communications. All air assets return to base.⁵

Saucedo’s understanding of the communications problem was “that crews on the ground thought that they were using yesterday’s Com Plan.” Crews on the ground at that time were still there from the previous days’ shift and were using the October 28 IAP; however according to Saucedo, the IAP for October 29 clearly shows a change.⁵ Review of the IAPs for October 28 and 29, indicates that the only change in the communications plan was in the Command Net (Air-to-Ground and Branch III Tactical nets were the same)].¹⁰⁹

Between 9:00 a.m. and 9:15 a.m., the main fire crosses Highway 78/79 just west of the Inaja Memorial. Both S/T Leader Chandler and Structure Group Supervisor Micheline note that the firing operations are all secure prior to this event and that the fire that spots across the Highway is a run of the main fire. Chandler says that the fire spots into light grass on the east side of the Highway and immediately starts running up the ridge. He commits his entire strike team to pick up the fire on the east side, but due to erratic fire behavior they have to leave the line.⁶

At about 9:00 a.m. on October 29, the backing fire (main fire) is well established across the draw below Highway 78/79 and spreads rapidly up the slope out of the drainage and across Highway 78/79. Structure Group Supervisor Micheline briefs his relief who is Division I, Dan Runnestrand, along with the incoming Branch III Director, Ray Chaney. He then goes to Ramona.¹

Division I Runnestrand is briefed by the night shift and afterwards makes plans to find an anchor point and use bulldozers to work the west flank of the “slop-over” that has crossed Highway 78/79. At this time he describes the “slop-over” as running north high on the west ridge above the San Diego River. He observes the wind is out of the south-southeast, at about five to seven mph.⁷



Engine 6162 crew at Santa Ysabel on the morning of Oct. 29, 2003; Left to right: Firefighter Barrett Smith, Engineer Shawn Kreps, Engineer Steve Rucker and Captain Doug McDonald.

Strike Team 2005A with Engine 6162 which is assigned to Branch III, Division I, arrives at Santa Ysabel at about 9:15 a.m..⁸ At first, Strike Team Leader Jim Watkins cannot find anyone from Division I.

Division I Runnestrand, who has been busy talking about a bulldozer operation finally arrives, and he and S/T Leader Watkins talk again. Runnestrand gives Watkins a “pretty good briefing on the fire activity the day before, what was goin’ on, what to expect.”⁹

Branch III Director Chaney meets with Division I Runnestrand at about 9:30 a.m. and instructs him to start a direct attack on the fire that has crossed Highway 78/79. After re-evaluating, Chaney directs Division I to move resources to the right or southern flank, establish an anchor point and go direct with suppression efforts heading east in a flanking action to keep the fire from moving south towards Julian.⁴

Also present during the briefing is CDF Fire Captain (FC) John Childe and CDF Fire Apparatus Engineer (FAE) Isaac Sanchez. FC Childe offers up his assistance to do some scouting for Branch III Chaney.¹⁰ FC Childe tells Chaney that he is going to conduct some scouting in the Schoolhouse Road area.¹¹

Deputy Branch III, Mike Wakoski, also speaks with FC Childe during this briefing. FC Childe introduces himself to Wakoski as the leader of a firing team. According to Wakoski, FC Childe also tells him that he is a liaison between the Paradise Fire and the Cedar Fire.¹²

S/T Leader Watkins notices during the briefing a CDF Fire Captain, (later identified as FC Childe¹³) who “interject(s) rather enthusiastically about doing some burning operations around the dozer... he (is) trying to convince the Division I Supervisor that you need to start puttin’ some fire on the ground.” S/T Leader Watkins says that the Fire Captain is “pretty aggressive about it.” Watkins thinks the Fire Captain is badgering the Division Supervisor who has listened to Childe, and is tired of it. Watkins says that the Fire Captain is not budging off his position even though the Division Supervisor has incorporated some of his suggestions into the plan.¹⁴

Division I Runnestrand states that during the briefing, FC Childe “(has) lots of ideas on how I should fight this fire, and, you know, which is not atypical when you have somebody that’s just out freelancing, lots of ideas.” During this conversation, according to Runnestrand, FC Childe makes it clear that he does not work for Division I and is not assigned to the division.¹⁵

FC Childe then leaves that location and conducts scouting in the Schoolhouse Road area where he runs into the leader of a U. S. Forest Service hand crew.¹¹

According to rough estimates by Division I Runnestrand, and Pilot Hunter Ridenour, (Tactical map by Runnestrand in evidence, and drawing by Pilot Hunter Ridenour in Tab Section 57 of Attachments) by late morning the fire has crossed Highway 78/79 and is burning in a northern direction up the ridge on the west side of the San Diego River drainage. The fire has spread

along this ridge about one half to three-quarters of a mile past Highway 78/79. The fire is making short runs in the grass, brush and oak trees in the area during the late morning.

Between 9:00 a.m. and 10:00 a.m., Air Tactical Group Supervisor Ray Saucedo returns to Branch III after clearing up the communications plan with Branch III. It is agreed that helicopter support can be called for down to the Division Supervisor level, unless it is an emergency.⁵



Slop-over Fire after it crossed Highway 78/79; viewed from Santa Ysabel by the crew of Engine 6162. Photo taken by Firefighter-Paramedic Barrett Smith at 9:47 a.m. on 10/29/03.

At 9:47 a.m., S/T 2005A with Novato Engine 6162 observes the fire that has crossed Highway 78/79 between Santa Isabel and the Inaja Memorial. (See photo above) By about 10:20 a.m., S/T 2005A is assigned to do structure protection in the Riverwood Estates. At 10:22 a.m., Firefighter-Paramedic Smith on Engine 6162 takes photos as they drive through the slop-over area. (See photo next page)

When Firefighter-Paramedic Smith¹⁶ and Engineer Kreps¹⁷, arrive in the Riverwood Estates, they find that the area around the structures has been fired-out and begin mop-up operations. Both watch as the fire burns to the west in the distance where the fire has jumped the highway and is now northwest of Highway 78/79. The fire is calm in the Riverwood Estates area.

While the crew of Engine 6162 is doing structure protection in the Riverwood Estates, Captain McDonald has a discussion with members of the crew, including Engineer Rucker, concerning the use of hose packs. Captain McDonald states that if there is a need to protect the structure, they will extend the deployed hose lines with the first 100 feet of a 200 foot wildland hose pack.⁹⁴ According to the apparatus inventory, these packs are located in the rear compartment of Engine 6162.



Engine 6162 driving through the slop-over area on Highway 78/79.

From his location in the Riverwood Estates, S/T Leader Watkins can see the fire burning on the other side of Highway 78/79. He describes the fire across the highway as being pushed along the hill slowly by the wind. He also describes the smoke column, at about 1,000 feet, as having the top going back over them to the east.⁹

Captain Michael Carpenter on Engine 24 of S/T 2005A and his crew are assigned by S/T Leader Watkins to protect a house on the east side of Highway 78/79, about one quarter mile north of its junction with Riverwood Road. They arrive at this location and while preparing the house, watch the fire across Highway 78/79 as it backs down the ridge towards the Highway. This house is located in the unburned island between Riverwood Road and Highway 78/79.¹⁸

S/T Leader Watkins deploys his strike team and then meets up with S/T 2004A who have shown up at their location. S/T 2004A cannot find the Division Supervisor so Watkins has them join in

doing structure protection. Watkins attempts but is unable to contact Division I by radio and inform him. Shortly after this, S/T 1286A also arrives.¹⁹



Looking west from Riverwood Estates towards the slop-over above Highway 78/79 at 10:56 a.m. on October 29, 2003. Photo taken by Firefighter-Paramedic Barrett Smith.

Deputy Branch III Mike Wakoski meets with Division I Runnestrand, at about 11:00 a.m. to re-allocate resources in an effort to cut-off the spread of the slop-over towards Wynola and Julian.²⁰ Plans are made to use bulldozers to build fire line around the fire on the north side of the highway. Bulldozers that were deployed to the west flank are moved towards the east flank. S/T Leader Watkins goes to recon the area and finds Division I Runnestrand, out on Highway 78/79 along with another staff member (believed to be Deputy Branch III). Watkins advises Runnestrand about the presence of S/T 2004A. Runnestrand says that he has been trying to raise them on the radio. During this meeting, Runnestrand tells Watkins that he needs them to move to Orchard Lane.³

Several helicopters, including 523 EH piloted by Hunter Ridenour, arrive about 11:35 a.m. and start making bucket drops along a dirt road on the east side of the San Diego River (dry at this time) just to the north of where Highway 78/79 crosses the river. The objective of this action is to try to keep the fire on the west side of the San Diego River drainage and away from structures in the area.²¹ Instructions from the Air Tactical Group Supervisor are for them to choose their

own drop points with priority to protect structures. Pilot Ridenour observes the wind at that location to be “strong out of the southwest up the draw and onto the ridge to the east.”⁵

Ron Mitchell, a resident at 1126 Orchard Lane, has stayed at his home to protect it from the fire on the morning of October 29th. He observes the fire from a lookout point on the west side of his property. Mitchell sees the fire burning on the west ridge across the canyon from his residence. He describes the wind as being out of the south and the fire spread to the north. Mitchell describes the fire as not burning very fast and he observes the flames going straight up. The smoke column is going up and then blowing to the northeast along the ridge. He estimates the fire (early on) is not yet below the mid-point of the ridge but is burning slowly towards the bottom of the canyon. There is blue sky above him with only a little wind at his home. He observes that the leaves in the trees are barely moving.²²

During this time, the fire on the west side of the drainage has moved up-canyon and gained elevation. Coming under the influence of a west wind running perpendicular to the ridge top, the fire higher in the drainage spreads to the northeast. Burning to and past the northeast corner of the property located at 902 Orchard Lane and leaving spot fires near the southeast flank. The fire has now established itself on the eastern side of the drainage in a hooking move to the northeast.

Mr. Mitchell, still at his residence on Orchard Lane, observes that at about noontime the winds start to change and are coming directly out of the west. He sees the fire move down into the canyon bottom from the west ridge and “start(ed) shooting up” to the north of his location.²²

S/T 2005A is grouped up again to begin its move towards the Orchard Lane area. Engine 24, still at the house about one quarter mile north of Riverwood Road on Highway 78/79, observes that the fire has almost burned down to the highway. At this time, the strike team drives by and Engine 24 falls into line behind them.³ Engine 334 goes to a hydrant to top off its tank.

At about 11:45 a.m. S/T Leader Watkins drives north on Orchard Lane²³ while S/T 2005A is staged at the intersection of Orchard Lane and Highway 78/79. Active fire behavior is observed to the north end of Orchard Lane. As he drives up Orchard Lane, the S/T Leader for 2005A realizes that it is a long road and he calls back for the strike team to start moving up. S/T Leader Watkins can see the fire coming and knows that time is short.²⁴

Prior to 11:50 a.m. and during an approach to the area in the bottom of the canyon near Highway 78/79, the pilot of helicopter 523 EH Hunter Ridenour, observes spot fires burning near the northeast corner of the structure at 902 Orchard Lane. The pilot calls air attack and informs him of the spot fires. The helicopter operation is then moved to the ridge on the east side of the drainage where residences on Orchard Lane are being threatened by a flanking fire.²¹



Post fire view of Orchard Lane looking north. Vehicles parked on side of the road are located just to the south of the driveway at 930 and 920 Orchard Lane.

At about 11:50 a.m., S/T 2005A arrives near 915 Orchard Lane.²³ S/T Leader Watkins begins to scout structure locations beginning with 902 Orchard Lane. At that location, Watkins lets his assistant out to recon the area by the water tank and he goes to the house. He observes that the house is at the end of the road, has a narrow access, and needs too much prep work. He writes this house off as not defensible.²⁵

Captain McDonald on Engine 6162 orders his engine backed up to get to a better location along the road due to the fire activity he sees ahead of them. The other units of the S/T back up with them.²⁵ The Crew of Engine 6162 identifies the fields to the east as a safety zone.

FC Childe and FAE Sanchez in Utility 3334 arrive at Orchard Lane and see bulldozers coming from the southwest on Highway 78. FC Childe has heard that the bulldozers are being turned down Orchard Lane and he has a safety concern with that due to the fire activity that he sees down Orchard Lane. He does not convey this concern to anyone else except FAE Sanchez.²⁶

The two bulldozers that FC Childe sees are a Los Angeles County Fire Department bulldozer operated by Jeff Vidrinskas and a Los Angeles City Fire Department bulldozer. The two

bulldozers off-load near Orchard Lane and Highway 78/79 and begin to “walk” through the meadow towards the north end of Orchard Lane.¹⁰⁷

At about 11:55 a.m. the S/T Leader for 2005A, after reviewing home locations, begins assigning engines to structure protection.²³ According to S/T Leader Watkins, Engine 334 remains un-assigned as they have just returned from filling up at a hydrant.²⁷

Because it is the first strike team assignment for Engine 1541, S/T Leader Watkins assigns them to a large metal building at 915 Orchard Lane, on the east side of the road.²⁸ They take up a position to protect this farm building which is said to have pesticides stored in it.

Engine 6162 is assigned to 920 Orchard Lane, the second home from the north on Orchard Lane. S/T Leader Watkins discusses with Captain McDonald the placement of the engine, the need to deploy hoses, and to clear out the area. He says that Captain McDonald and his crew state they are comfortable with that.²⁹



Looking up the driveway at 920 Orchard Lane from its intersection with Orchard Lane.

Captain McDonald on Engine 6162 orders Engineer Kreps to back the engine up the cement driveway at 920 Orchard Lane. He then walks up the driveway ahead of the engine to evaluate the location. Firefighter-Paramedic Smith on Engine 6162 and Engineer Rucker are cutting brush, which is hanging over the sides of the cement driveway, and directing the backing of the engine.³⁰

S/T Leader Watkins rejects putting an engine at 930 Orchard Lane as it is too risky. This is the third residence from the north and directly south of the residence where Engine 6162 is assigned.³¹

Engine 24 (E5228) from Vallejo is assigned structure protection at 1038 Orchard Lane. The house at 1126 Orchard Lane is skipped and Engine 71 is assigned to the next house to the south.³²

FC Childe and FAE Sanchez, in Utility 3334, drive north on Orchard Lane, passing Engines 24 and 71 on Orchard Lane near the driveway of 930 and 920 Orchard Lane. The two engines are headed south to their assigned locations.^{33,114} Engine 334 is parked in a driveway on the east side of the road as FC Childe and FAE Sanchez pass. FAE Sanchez is video taping as they go, and the driveway to 920 Orchard Lane is clearly visible in the video as they pass that location.¹¹⁴ When FC Childe passes the engines on the road, he then determines that he is going to fire-out.³⁴

FC Childe and FAE Sanchez continue north on Orchard Lane and observe an engine (1541) parked near 915 Orchard Lane. Once again FC Childe states that he has a safety concern about the bulldozers and engines coming in to do work in the area,^{114,35} There is no indication that he ever conveys that concern to anyone else. FC Childe drives around the engines. Both FC Childe and FAE Sanchez express their concern about the engines being able to hold Orchard Lane and state to each other that they should just get out¹¹⁴.

S/T Leader Watkins observes the Fire Captain that he has seen earlier at the briefing in Santa Ysabel, drive past in a utility and go up towards 902 Orchard Lane.³⁶ FC Childe and FAE Sanchez in Utility 3334 see fire beyond the northernmost approach to 902 Orchard Lane, so they turn a hard left up the first drive at 914 Orchard Lane¹¹⁴.

While FAE Sanchez sits in the truck, FC Childe parks near the southwest corner of the driveway and video tapes the fire that passes the property from the southwest to the northeast. Small torching activity is visible¹¹⁴ in the immediate area with most of the fire spread being past the property on the north side. FC Childe describes the main fire as having passed and local flame lengths are about 25-30 feet. Observing the fire spread that is now flanking across the slope to the southeast,³⁷ FC Childe initiates a firing action around the residence^{114,38}.

According to the ICS-214 for FC Childe, he and FAE Sanchez begin to take “Independent Action on structure protection.”³⁹ FC Childe gives FAE Sanchez instructions to fire-out around 902 Orchard Lane. FAE Sanchez gets into the rear of the truck and prepares a drip torch. He then goes to the west side of the residence and begins to fire out. FAE Sanchez has no radio.⁴⁰

FC Childe has given FAE Sanchez the only HT (it is unknown when).⁴¹ According to FC Childe, the firing-out is just ahead of the fire at all times.⁴² FC Childe continues to describe the main fire as banking southeasterly towards the structures. He states that the fire activity “was great until we start(ed) dropping fire and then they started to pick up and started to flame...”⁴³

FC Childe in Utility 3334 returns to Orchard Lane alone,⁴⁴ and instructs Engine 334 to go to the residence at 902 Orchard Lane and do structure protection in support of his firing-out operation.⁴² (FC Childe later states that during the firing-out operation, “I was watching him, what he was doing, making certain that he was in visual contact with me all the time. And you know, we did that for each structure.”)⁴⁵

FC Childe makes face to face contact with the Strike Team Leader of S/T 1286A and tells him of his intentions to fire-out around the residence and the need for an engine. Childe says that the S/T Leader tells him that they are on White 3 as a tactical channel. FC Childe says that he later finds out, after unsuccessfully trying to communicate with the S/T Leader, that it was White 3 on the 800 MHz and he only had VHF.⁴⁶ FC Childe states that there was not a lot of communication going on that he could hear and he was “getting a little bit unnerved.”⁴⁷

S/T Leader Watkins sees FC Childe walk by and hears him say, “you need to start puttin’ fire down on the ground or you’re gonna start losin’ houses.”⁴⁸ Engine 334 calls S/T Leader Watkins and advises him of the instructions from FC Childe.

S/T Leader Watkins, believing that FC Childe is going to coordinate and work with Engine 334, tells the crew to go ahead and support the firing-out operation. It is days later when Watkins finds out that the crew of Engine 334 thought FC Childe was coordinating the firing-out with the S/T Leader. Conversely, Watkins thought that FC Childe was going to remain to assist Engine 334.⁴⁹

S/T Leader Watkins observe a U. S. Forest Service hand crew (El Cariso Hot Shots) and some bulldozers (LA County) go past him to the north on Orchard Lane. S/T Leader Watkins assumes the crew and bulldozers, who are going to work the edge of the fire, are coordinating their efforts with the firing-out operation.⁵⁰

At 11:57 a.m. Engine 24 arrives at 1038 Orchard Lane.²³ They observe no visible fire near the structure. Captain Mike Carpenter hikes about 300 yards uphill behind the house and never sees any fire. The crew can see a column further north down Orchard Lane, moving from west to east.⁵¹

Captain McDonald returns to Engine 6162 after assessing the situation and expresses some concern about the conditions. Captain McDonald radios S/T Leader Watkins and advises him that he does not think the house is defensible. S/T Leader Watkins tells them to come out. According to Captain McDonald he returns to review the situation with Firefighter-Paramedic Smith and Engineer Rucker.⁵² At the top of the driveway, they can see smoke from the fire to

the north near 902 Orchard Lane, and determine it to be the primary threat. They observed it to be a flanking fire.⁵⁴

Captain McDonald, Engineer Rucker and Firefighter-Paramedic Smith walk to the end of the driveway past the front of the residence, which faces west towards the San Diego River drainage below. After a review of the location they find that brush had been cleared away to the west of the residence for about 150 feet and a decision to deploy at this location is made. This clearance of brush provides for a view across the canyon to the west and northwest. Tall brush and drifting smoke restrict the view to the southwest.⁵⁵

The prominent fire in view at this time is still the flanking fire to the north near 902 Orchard Lane. Small runs of fire are taking place across the canyon on the west side of the drainage as it backs down into the bottom of the canyon. No fire activity is visible to the southwest. The crew of Engine 6162 observes that there is a wind blowing up-canyon and upslope on a line from where Highway 78/79 crosses the San Diego River towards the location of 902 Orchard Lane, a natural saddle. Wind speeds are estimated at 7-10 mph.⁵⁴

After Engine 6162 arrives at the top of the driveway at 920 Orchard Lane, the crew conducts a briefing with Captain McDonald laying out the plan of deployment and preparation. An axe is placed at the rear door in preparation for forced entry should it be needed. A chain saw is placed on a cement patio at the south end of the house after doing some additional brush clearing. The roof is laddered near the front door using one found at the residence.⁵⁷

The front bumper line is charged and prepared as an engine protection line should they have to drive out under fire conditions. Two, 100 foot long, one and one-half inch hose lines are deployed and charged to protect the structure. These hoses are attached off the rear wye discharge and are placed to the passenger side of the engine.⁵⁷

FAE Sanchez completes firing around 902 Orchard Lane. He has fired from south to north along the west side of the residence. FAE Sanchez walks back to where the utility is parked and finds both it and FC Childe gone. He walks cross-country down the hill to Orchard Lane where he sees Engine 334 coming up the driveway. He turns and walks back up with the engine.⁵⁸

At about this time, CDF Copter 202, with Captain Jesse Scofield on board, tries to contact Engine 334 on Air-to-Ground. Captain Scofield observes that the winds at his elevation are blowing hard out of the west and beginning to change to the northwest.⁵⁹

Captain Scofield observes what he thinks are backfires below and close to the houses on the ridge. He sees firefighters working them with hoses. He later decides that they were spot fires as they were “round, not narrow.” He returns to base for fuel and is not able to reach any ground resources on Air-to-Ground before he leaves.⁵⁹

FC Childe returns with the utility and rejoins FAE Sanchez. The two, after trying to fire out around an outbuilding, drive out to Orchard Lane. With FAE Sanchez in the rear of the utility, they proceed south on Orchard Lane and up the driveway towards 930 Orchard Lane.⁶⁰

FAE Sanchez recalls going to this location and during a field interview with Investigator Alan Carlson, describes his actions at this location. FAE Sanchez admits that FC Childe videotaped him burning at this location.^{61,114}

FC Childe says that he did not go up the driveway to 930 Orchard Lane. After walking up there with investigators he states that he has no memory of burning out in that location.⁶²

The crew of Engine 6162 does additional work preparing the residence for the on-coming flanking fire from the north including the cutting and removal of additional brush from the area behind the engine. The engine is moved back about ten feet to avoid subjecting it to heat from a brush pile the crew burns below the driveway.⁶³

S/T Leader Watkins and his assistant arrive at about 12:25 p.m. at 930 Orchard Lane to re-evaluate the use of an engine at that location. Shortly after their arrival, FC Childe and FAE Sanchez in Utility 3334 arrive. Childe instructs FAE Sanchez to begin firing-out the area around the structures. This firing is observed by S/T Leader Watkins to be about 100-150 feet away from the structures and appears to him to be “too big of a bite as the fire (gets) into the brush and (begins) making a run towards the driveway.” A helicopter makes a drop on this fire and slows it down. Utility 3334 is blocking their means of egress.⁶⁴

After FAE Sanchez fires out from south to north along the west side of the structures at 930 Orchard Lane, FC Childe instructs FAE Sanchez to take the line of fire to the next house to the north, which is 920 Orchard Lane. FC Childe is video taping this^{114, 65}.

In a later interview, FC Childe states, “I’m sure there was nothing between me and what I was firing out because the fire was just way too close to these structures that I was, you know, droppin’ fire behind, you know, it just was there. And if there was any engines out there, they were trapped maybe before I even got there.”⁶⁶

Evidence indicates that at the time that FC Childe and FAE Sanchez fired-out at 930 Orchard Lane, the main fire was still flanking in the area of 902 Orchard Lane. Engine 6162 at 920 Orchard Lane was between FC Childe’s firing operation and the main fire. (See later sequence of events, firing out at 920 Orchard Lane.)

The firing-out operation at 930 Orchard Lane quickly generates fire spread towards the east which is knocked down by the helicopter water drop.⁶⁴ The video tape taken by FC Childe at this location shows that fire is igniting and spreading at a rate that FAE Sanchez does not feel comfortable with. FAE Sanchez admits this to be true in a later interview. The video also shows a wind influencing the fire spread from west to east. The fuels between where they are firing at 930 Orchard Lane and where Engine 6162 is at 920 Orchard Lane, consist of 15-foot tall brush

and oak with grass underneath¹¹⁴. FC Childe and FAE Sanchez are observed by S/T Leader Watkins as they drive back down the driveway.⁶⁴

Jay Bertek, the supervisor for the El Cariso Hotshots observes a line of fire on the ridge between 930 and 920 Orchard Lane. He is unsure of where this fire is coming from but knows it is not the main fire. He calls his crew who are working near 902 Orchard Lane and asks them if they are firing-out. They tell him that they are not. Bertek observes that the main fire is now “leading sparks.”⁵⁶

FC Childe and FAE Sanchez drive down the driveway of 930 Orchard Lane, which comes out directly next to the driveway at 920 Orchard Lane. The two drive up the driveway to 920 Orchard Lane where they park near the garage. The two get out and FAE Sanchez begins to light fire back towards the north, in the direction of 902 Orchard Lane.⁶⁷

Captain McDonald walks north on the driveway from the location of Engine 6162. While near the front door of the residence, he observes a CDF pickup truck arrive at the top of the driveway and park near the garage. He observes two people get out and one of them starts lighting a fire back to the north towards 902 Orchard Lane. He does not speak with them, however he believes the Captain in the truck sees him. He does not see the truck leave.⁶⁷

Captain McDonald indicates to the members of the crew that there is a CDF firefighter firing-out in the direction of the garage. Captain McDonald instructs the crew to fire-out the grass below the driveway. Engineer Kreps walks north on the driveway to the garage area, and observes fire on the ground already behind the garage and to the north in the brush. He then begins his strip-firing from that location to the south along the edge of the driveway. Captain McDonald throws fuses down the slope into the heavy brush below the area strip-burned. This results in a partial burn.⁶⁸

S/T Leader Watkins and his assistant drive back down the driveway of 930 Orchard Lane and along with the S/T Leader for 1286A, park near the bottom of the driveways of 930 and 920 Orchard Lane.⁶⁴

FAE Sanchez continues to light fire from the driveway at 920 Orchard Lane towards the driveway at 902 Orchard Lane. Alone, FC Childe in the utility returns to the bottom of the driveway at 920 Orchard Lane.⁶⁴ Both FC Childe and FAE Sanchez deny having been up this driveway or having fired-out in this area.

The crew superintendent for the El Cariso Hot Shots observes fire along the ridge between 902 Orchard Lane and 920 Orchard Lane. He again calls his crew and asks if they are firing-out. The crew has arrived behind 902 Orchard Lane and is starting to contain the fire’s edge along with the bulldozer. They reply to Bertek that they are not firing-out. The crew superintendent for El Cariso, concerned about this unexplained fire on the ridge and spot fires in the meadow to the east of Orchard Lane, calls his crew out and orders them back to their safety area.⁵⁶



Picture taken by Engineer Kreps of the fire he finds on the ground north of the garage just before he begins to fire-out from this location. This is the same area where Capt. McDonald sees two CDF personnel firing-out at the top of the driveway. View is to the north towards 902 Orchard Road.

S/T Leader Watkins and his assistant observe FC Childe in Utility 3334 come out the driveway at 920 Orchard Lane alone. FC Childe approaches them and “adamantly demands(ed) to know why we (do) not have a unit up there. We inform(ed) him we (do) and proceed(ed) to that location.”⁶⁴

Watkins and his assistant arrive at the location of Engine 6162 at about 12:35 p.m. and review their progress and plans. Watkins observes that the sky is clear overhead and the winds are moderate, still up-canyon and upslope. S/T Leader Watkins writes in his ICS-214 that they spoke with the Captain and Engineer of Engine 6162 and discussed their situation. Watkins notes that the crew of Engine 6162 is in the process of strip-burning and about to throw fusees into the brush. He observes the fire backing down the ridge from the north and it is about 300 yards to the right of the house. S/T Leader Watkins sees nothing below the house.⁶⁹



Area below and to the southwest of Engine 6162 where brush had been cleared and the crew of Engine 6162 strip-burned grass stubble. Capt. McDonald had thrown fuses into brush below the clearing.

As Watkins and his assistant leave 920 Orchard Lane, they receive a radio message from Engine 334 at 902 Orchard Lane. Engine 334 tells them that they have spotting from a firing operation below them which has cut off their egress. Watkins then heads to that location but is cut off by an LA County bulldozer working the area.⁷⁰ About five to eight minutes after S/T Leader Watkins leaves the scene, the crew of Engine 6162 observes an increase in the fire activity below them.⁷¹

S/T Leader Watkins sees signs of the fire picking up but still believes it to be from the northwest, the direction he has always thought it would come from.⁷² It is at about this time that he begins to hear the fire.

FC Childe picks up FAE Sanchez and they then drive south on Orchard Lane towards 1038 Orchard. FC Childe and FAE Sanchez, arrive at 1038 Orchard Lane followed by a news crew.^{50,114} They observe firefighters sitting in chairs and FC Childe tells them to get out of the chairs.⁷³

According to members of Engine 24, Captain Childe gets out of the truck and tells the firefighters in the chairs to “Get out of the fuckin’ chairs before I break you guys’ heads.” Captain Childe then advises their Captain that he is going to fire-out. FAE Sanchez starts to fire-out in a semi-circular area that begins near the driveway, proceeds to the rear of the house and then swings back towards Orchard Lane.⁷⁶

FAE Sanchez can hear the fire picking up from the west and hears the sounds of a sustained rapid fire run. FC Childe says that the firing-out at 1038 Orchard Lane takes place about 2-3 minutes before the main fire hits that location.⁷⁴ FAE Sanchez, concerned about the situation tells FC Childe that he is going to stay and help the crew.^{75 114}

The crew of Engine 24 reports that prior to this action there is little or no wind in the area. The crew observes fire from the firing operation spread to the brush and ignite an outbuilding. The fire intensifies, crosses over the driveway and cuts off the Engine crew’s egress. The crew becomes encircled by fire and the wind changes directions and becomes erratic.⁷⁷ (This occurs about 1:00 p.m. according to Childe.¹¹³

Burn indicators, observations from Ron Mitchell the resident at 1126 Orchard Lane, and news video footage, indicate that at about this time the flank of the main fire begins a run from the bottom of the drainage to the northeast.¹¹⁶ Burning upslope and up-canyon influenced by a combination of up-canyon and westerly winds, the fire forms a major front which burns in continuous fuels directly towards the area of 920 and 930 Orchard Lane.⁸⁰

Ron Mitchell notices a sudden wind shift with winds beginning to blow hard from the west. “And then all (of) the sudden there (is) this huge, the wind (is) fierce and there (is) this huge wall of flame that (comes) through, between my property and Hubble’s property.” (930 Orchard Lane)⁸⁰ He observes smoke cover the area north of his house and he sees flames getting big to the north of his house. Within a short time, the flames are near his house and he decides to evacuate. By the time he makes it down to Orchard Lane, he notices the time is 1:15 p.m. and the fire has burned past his house down to Orchard Lane along his driveway.⁸⁰

During this same time period, the operator of the Los Angeles County bulldozer, Jeff Vidrinskas is notified by his transport driver, Michael Rodan (who is located near Highway 78/79 and Orchard Lane) that the fire is becoming very active. Vidrinskas takes his bulldozer down off the west side of the driveway at 902 Orchard Lane in a flanking action. Within a few minutes and less than 100 feet down the hill from the driveway, Vadrinskas pushes over an oak tree. As he does this he observes a wall of fire ahead of him. He describes it as a wall of flame well over 100 feet tall and over 300 yards wide. Looking to his left and right, all that Vadrinskas can see is the wall of fire. He pulls back to the driveway at 902 Orchard Lane.¹⁰⁸



Main fire running from southwest to northeast. Viewed from Orchard Lane near 1038 Orchard. Flames on the right in background are near 930 Orchard Lane.



Fire picking up below the crew of Engine 6162 just as they begin to retreat back to the engine from firing-out. Photo taken by Engineer Kreps.

The crew of Engine 6162 gathers at the engine to talk. As the fire intensity increases, the crew decides to retreat to the passenger side of the engine away from the radiant heat below them. Firefighter-Paramedic Smith staffs a one and one-half inch hose line at the front passenger side while Engineer Rucker staffs a similar hose line near the rear passenger side. Engineer Kreps is standing at the rear duals on the passenger side with his back to the engine.

Captain McDonald is just to the rear of Firefighter-Paramedic Smith.¹¹⁰ Firefighter-Paramedic Smith observes Captain McDonald closer to the rear bumper than Engineer Rucker.¹¹¹ Engineer Kreps states that all four members of the crew make it around to the passenger side of the engine. Kreps says that they move around, including walking to the tailboard of the engine (See photo taken by Engineer Kreps). Kreps recalls Firefighter-Paramedic Smith being forward of his position (towards the front bumper). Kreps has his back to the engine rear duals, and Engineer Rucker is directly in front of him no more than five feet away.¹¹² Captain McDonald has the only portable radio.⁸¹

As Firefighter-Paramedic Smith takes his position at the front of the engine, he notices hot embers blowing into the juniper bushes on the patio behind him. He uses his hose to knock down some fire in the bushes.⁸⁵



Picture taken by Engineer Kreps as he steps out from behind the cover of the passenger side of the engine.

Captain McDonald states about this time, “The sky start(s) turning orange, and it just (got) – at that point in time – became pretty untenable outside. So, I order(ed) the crew to deploy inside the structure.”⁸² Firefighter-Paramedic Smith describes the conditions as, “Uh, full sunlight to the point where we went around the engine, to that twilight, darkness and smoke and the orange glow and fire embers going constant past the engine, the heat, the heat intensity dramatically start(ed) to pick up.”⁸³

Engineer Kreps states, “that’s when the sky got dark, it started getting real hot, embers flying everywhere, and it just, the sound of the, you know, the freight train coming, it was getting worse and worse and worse and we decide that before it got any worse, we better retreat to the house.”⁸⁴

Members of the crew notice a significant wind increase at this time. A flaming front is observed by Firefighter-Paramedic Smith blowing across the driveway in the direction of the garage, cutting off their egress.⁸⁶ Captain McDonald orders the crew to move to the shelter of the residence.⁸² At about the same time, S/T Leader Watkins, positioned near 915 Orchard Lane, sees fire “blowing through” the area of the ridge north of Engine 6162 and south of 902 Orchard Lane. He estimates this event to last about 15 seconds. Visibility is down to a few feet due to heavy smoke and S/T Leader Watkins later states “you could hear the fire at that point. It was, it was comin’ and it was rippin’.”⁸⁷

Juniper and Boxwood bushes planted along the cement patio behind the crew of Engine 6162 burst into flame. Responding to Captain McDonald’s order to get into the structure, Firefighter-Paramedic Smith immediately drops his hose line and runs in the direction of the three-foot high raised patio. (During the accident scene investigation, a nozzle and hose remains were located on the ground just forward of the front bumper on the passenger side, consistent with Smith’s statement.) Immediately upon leaving the protection of the engine, Firefighter-Paramedic Smith experiences severe thermal conditions. He leaps past the burning bushes and onto the patio. He is followed closely by Engineer Kreps who runs to the steps, stumbles and falls to his knees at the top of the steps, recovers and continues to retreat behind the rear of the house following Firefighter-Paramedic Smith. It is a distance of about 170 feet to the rear door.⁸⁸

Captain McDonald, moves towards the steps of the patio and accounts for Engineer Kreps and Firefighter-Paramedic Smith while they make it up onto the patio and around the rear corner of the house. He then turns back towards the rear of the engine to account for Engineer Rucker. He does not understand why Engineer Rucker is taking so long. Near the rear of the engine Captain McDonald locates Engineer Rucker, who appears to him to be dazed and confused.⁸⁹



Steps which the crew members used to get up onto the patio.

Captain McDonald starts yelling at Engineer Rucker to move to the house. “Now, Steve, looked back and Steve’s at the back of the Type 3 and, I said, Steve, c’mon let’s go. We gotta deploy. And he’s still on the, I just don’t know at this point in time exactly. I mean, I could see what the other guys, had a mission and purpose to get inside the structure. Steve, he didn’t seem to have mission and purpose. He was just kind of, he started, so as I talked to him he, he turned his head and almost started walking the opposite way and I said, Steve, c’mon, let’s go. We gotta get in there. We have to, and he goes, uh, and he started coming towards me, he said, ‘Oh, I’m burning up.’”⁸⁹

Captain McDonald observes Engineer Rucker take two steps toward him and fall to the ground. Captain McDonald sees him “(get) up on all fours” and stand back up. Engineer Rucker then turns toward the tailboard of the engine and McDonald thinks he takes a “half step” in that direction. He notes that Engineer Rucker is looking in a southeast direction.¹¹⁰

Engineer Rucker turns towards McDonald and states “I’m burning.” McDonald sees Engineer Rucker step towards him and then turn towards the bushes and the patio. Rucker then falls face-forward into the burning bushes. Captain McDonald moves towards Engineer Rucker who is already pushing himself away from the bushes. McDonald assists Engineer Rucker to the steps and Engineer Rucker makes it up the steps under his own power. McDonald notes that Engineer

Rucker is slightly hunched over at the waist.^{89, 110} He then follows Engineer Rucker up the steps to the patio.⁸⁹

Physical evidence located at the top of the steps, including a gated-wye, fusees, hose spanner, and flagging from pouches attached to the web gear of Captain McDonald, indicate that Captain McDonald's web gear was failing at this time and equipment was falling off. This was most likely due to burning of the web gear and pouch.

No member of the crew has any recollection of Engineer Rucker having a wildland hose pack on, and Captain McDonald has no recollection of instructing Engineer Rucker to don a hose pack at this time. However, physical evidence recovered from and around the body of Engineer Rucker clearly indicates that he had a 200 foot, one and one-half inch wildland Gnass hose pack on his back. These packs are located in the middle rear compartment of Engine 6162. An inventory of the engine after the accident shows that one 200-foot wildland hose pack is missing from this compartment.



Burnt outline of first 100 feet hose pack dropped near the feet of Engineer Rucker on patio. In-line Tee visible in upper middle portion of photo.

Physical evidence at the scene shows that as Captain McDonald and Engineer Rucker crossed the patio, the first 100 feet of the hose pack fell to the ground and burned without having been

deployed fully. It cannot be determined if this was due to an intentional deployment or failure of the hose pack.

Captain McDonald observes Engineer Rucker fall to the ground on the patio (within a few feet of the first 100-foot bundle of hose). Captain McDonald makes an attempt to get Engineer Rucker up but cannot.⁸⁹

A King portable radio belonging to the Novato Fire District is later found on the ground next to the body of Engineer Rucker on the side nearest the steps. This radio had been carried by Captain McDonald and was being used to transmit on the tactical channel. Captain McDonald has no recollection of making a radio transmission next to Engineer Rucker at this point in time.



King portable radio left on patio just to the west side of Engineer Rucker (between Rucker and patio steps)

S/T Leader Watkins, from his position near 915 Orchard Lane observes the fire front hit the entire area and roll over the ridgetop down towards Orchard Lane, from 902 Orchard Lane down to 1038 Orchard Lane where Engine 71 is located. The conditions go from hazy to dark to hazy again within just a couple of minutes. His assistant gets on the radio and begins to do radio checks with the units. It is at this time that they hear a radio call on the tactical channel from Engine 6162 that they have a man down.⁹⁰ Documented times for this transmission from other

units who heard the call on the tactical channel range from 12:45 p.m.⁹¹ to 12:55 p.m.⁹² Water tender operator Marchisio writes in his ICS-214, “1245, Heard radio transmission over tactical net reporting- Firefighter down, followed by –Not able to get in his shelter.”⁹¹

Captain McDonald states that he “turned like 180 degrees trying to yank him (Engineer Rucker) up.”⁸⁹ This is consistent with the physical evidence found at the scene indicating that the second 100-foot bundle of hose from the hose pack had been pulled away from Engineer Rucker in the 180-degree direction described by Captain McDonald, towards the rear of the patio.



Second 100 feet of hose pack found just above and next to the right shoulder of Engineer Rucker.

Captain McDonald yells for the other two crew members to return but cannot be heard due to the noise of the fire. McDonald is aware that, “at (this) point in time, I’m fryin’ and I know that I’m getting badly burned...”⁸⁹

The fire has reached the ridgeline and is being funneled across the ridge to the east. Physical evidence recovered at the accident scene indicates that fire impinging upon the charged hose lines coming off the rear of the engine causes the hose to fail and the engine tank is pumped almost dry.

Captain McDonald, feels himself getting burned, and walks around the rear corner of the house. He then returns around the corner onto the patio to make another attempt at getting Engineer Rucker up. He observes that Engineer Rucker's body is on fire and determines that he is beyond help and turns back toward the rear of the residence.⁸⁹

Having arrived at the rear door, Firefighter-Paramedic Smith and Engineer Kreps use the pre-positioned axe and kicking to force the door open. The two of them enter into the rear of the residence. Turning around, they realize that there is no one else following them. They decide to return and look for Captain McDonald and Engineer Rucker.⁹²



View from near the rear door of the residence looking toward the patio. This is the path taken by the crew after turning the corner from the patio, and the route used to return to look for missing crew members. Tree located in upper right corner of photo is next to the location where Engineer Rucker went down for the third and final time.

Firefighter-Paramedic Smith and Engineer Kreps travel back along the rear of the house to the south end, using the house as protection. As they near the southeast corner of the house, near the patio, they observe that beyond the end of the house there are solid flames blowing sideways, including the area of the patio. Just as they arrive at the corner, Captain McDonald staggers around the corner out of the flames. He appears to be burned and dazed.⁹²

Captain McDonald tells the other two that Engineer Rucker has fallen and tells them they need to go back for him. Captain McDonald turns to go back after the fallen Engineer. Engineer Kreps and Firefighter-Paramedic Smith determine the patio area is not tenable. They see direct flame and feel an extreme amount of heat in the patio area. Taking the Captain with them, the three retreat back into the rear door of the residence.⁹²

Inside the residence, feeling himself burning, Captain McDonald takes off his web gear. He searches for his King portable radio but cannot find it to make a call out for help. The three discuss a plan to search for Engineer Rucker.⁹³

After a moment, a decision is made to open the front door slowly and check to see if the area in front of the house is tenable. When the door is opened, intense heat surges through the small opening. The door is quickly closed. After another few minutes, a decision is made to check the front door again. This time the heat has subsided and Engineer Kreps exits the doorway in search of the missing Engineer. Firefighter-Paramedic Smith attempts to exit the door but is forced back by a wave of heat. He remains inside the residence and cares for the Captain.⁹⁵

Engineer Kreps moves towards the front bumper line of the engine taking small shallow breaths. He passes the front of the patio and observes the body of Engineer Rucker midway across the patio. Kreps continues to the bumper line and advances it towards the body. Opening the nozzle, he gets a 10 to 15 second burst of water before the engine's tank is dry.⁹⁵

At this time, an increase in fire intensity forces Engineer Kreps to take shelter in the rear seats of the engine. Once inside, Kreps considers deploying the extra fire shelters stored in the cab. Concerned that Firefighter-Paramedic Smith and Captain McDonald may think another member of the crew is down and come searching for him, Engineer Kreps takes a single breath and runs to the front door. Firefighter-Paramedic Smith, in the house, begins to open the door in an effort to go after Engineer Kreps. As Firefighter-Paramedic Smith opens the door to look for him, Engineer Kreps steps inside and rejoins the other two.⁹⁵

While the three of them sit near the front entrance of the house, the north end of the structure begins to burn. Smoke begins banking down to waist level and a decision is made by the group to try and get to the engine. The three exit the front door. The Captain is assisted to the front passenger seat. Firefighter-Paramedic Smith runs to the rear of the engine and disconnects the two protection lines. He then enters the cab at the rear passenger seat. Engineer Kreps gets into the driver's seat.⁹⁶

Engineer Kreps engages the drive for the engine and slowly drives towards the north and turns down the driveway to the east. Heavy, dark smoke obscures the driveway. Engineer Kreps is forced to feel his way down the driveway using the feel of the tires dropping off the edge of the pavement to make corrections. At one location, the engine is stopped to avoid running off the road and getting hung up on a tree. After a short pause, concern about being overrun by the fire again convinces them that they need to move forward.⁹⁶



Photo taken after the accident with Engine 6162 placed back into position of where it was during the burn-over. The Engine is facing north. Fired-out area shown in lower left corner of photo. Steps used to access patio are just north of the engine. Engineer Rucker's body was found just below tree on patio.

At 1:05 p.m., during the descent of the driveway, the Captain gets on the radio and transmits a firefighter down message on Command Net.⁹⁷ S/T Leader Watkins, hearing that the crew is leaving one person behind, gets onto Command Net and calls for air drops and a medivac.^{98,115} S/T Leader Watkins and Division I exchange radio traffic on the situation and discuss the possibility of a rescue attempt for the downed Engineer.⁹⁸

Engine 6162 is successfully driven to the bottom of the driveway and onto Orchard Lane. S/T Leader Watkins, only 25 to 30 feet from the end of the driveway and in heavy smoke, does not see the engine leave.⁹⁸ Engine 6162 travels down Orchard Lane to the south. At 1:09 p.m.,⁹⁷ Captain McDonald again makes a radio transmission on Command Net to other units concerning the incident. Captain McDonald orders the engine to stop in the road and he gets out. The crew members assist him back into the engine. They continue towards Highway 78/79. At 1:10 p.m., the three crew members of Engine 6162 arrive at the south end of Orchard Lane just short of Highway 78/79 where they found the Plumas Hotshots.⁹⁹ The three crew members of Engine 6162 exit the engine and announce to the Plumas Hotshot crew that they have been burned.

S/T Leader Watkins and his assistant position their command vehicle at the bottom of the driveway at 920 Orchard Lane in an attempt to evaluate the potential of going to the aid of the downed Engineer. Conditions preclude a safe effort to go up the driveway and they stay near the bottom.¹⁰⁰

About this time, CDF Copter 202 with FC Scofield, returns to the area and observes that the ridge where they have been working previously is smoked-in and the winds are out of the northwest. Shortly after that, he hears Branch III on Air-to-Ground net ask the Air Tactical Group Supervisor for agency ships in the area to conduct a medivac.⁵⁹

USFS Engine 39 arrives at about 1:11 p.m.⁵⁷ at the medical treatment area and volunteers to conduct a search and rescue operation at 920 Orchard Lane. They drive through heavy smoke conditions on Orchard Lane and meet with S/T Leader Watkins at the bottom of the driveway of 920 Orchard Lane. Engine 39 gets the layout from the strike team leader and then the five-person engine crew drives to the scene.¹⁰¹

Engine 39 arrives at the scene at about 1:15 p.m. and after discovering the body of Engineer Rucker, announces an “11-44” at 1:18 p.m.¹⁰² S/T Leader Watkins states that within a minute or two of this broadcast, he hears a loud release of pressure which he thinks is a propane tank release. Watkins then hears Engine 39 make a radio transmission stating that they have a propane tank venting with flames. All equipment is ordered out of the area.¹⁰³

FC Childe and FAE Sanchez are finishing their independent firing-out operation around the last house on the south end of Orchard Lane at this time. Near the last house, FC Childe stops and does a 15 to 20-second interview with the news media. At no time does FC Childe hear any traffic about anyone being overrun by fire or being hurt. FC Childe sees the entire strike team of engines pulling out and does not know why. He then conducts a recon to make sure all the engines are out.¹⁰⁴

FC Childe admits that at no time during the entire operation does he attempt to contact the Division Supervisor and advise him of his intended actions. Childe does not see the Division Supervisor during his activities on Orchard Lane that day. FC Childe states that “I didn’t even give it a thought to call the Division because I didn’t really have a lot of time to try.”¹⁰⁵

FC Childe and FAE Sanchez drive to the south end of Orchard Lane. It is not until they arrive near Highway 78/79 that they discover that someone has been burned. FC Childe sees the Novato Engine (6162) for the first time.¹⁰⁶

FC Childe later states that he hoped the Novato Engine had been located some place north of where the main fire made its run.¹⁰⁶



Engine 6162 at initial medical treatment area at 3:08 p.m. on Oct. 29, 2003. Note the time stamp on the photograph is one hour ahead of the correct time.





Post Accident Treatment

The Plumas Hotshots are staged at Hwy 78/79 and Orchard Lane at approximately 1:00 p.m. They hear radio traffic about an engine burn-over and firefighter injuries.

At approximately 1:03 p.m., the Julian Fire Department Paramedic Ambulance is notified by radio that San Diego County Sheriff Deputies are transporting a patient of a vehicle accident to the Julian Fire Station, #71. The patient is reported to have been rear ended while in a black sports utility vehicle on Hwy 78/79 near Farmer Lane. This accident takes place just east of where Highway 78/79 crosses the San Diego River. The medics do not see the vehicle accident scene. (This incident causes initial confusion as to the location of the burn-over.)

The Sheriff Deputies bring the patient of the vehicle accident to the Julian Fire Station at about 1:08 p.m. Julian Fire Paramedic Chris Yeary initially treats this patient. While packaging the vehicle accident patient, Paramedic Yeary is told about firefighters being burned. Paramedic Yeary requests that the backup Julian Fire Department Ambulance respond to this location to treat the victim of the vehicle accident.

The vehicle accident patient was reported to be an out-of-state volunteer firefighter who was assisting in the fire fighting efforts. Mercy Air Flight transported the victim to the hospital.

At about 1:10 p.m., Engine 6162 arrives at the intersection of Orchard Lane and Highway 78/79. They advise the Plumas Hotshots there that they are the engine crew that was burned-over. The Plumas Hotshots triage the patients and administer medical assistance to the injured firefighters. Advanced Life Support (ALS) ambulances and medical helicopters are requested.

Captain McDonald is triaged as the most severely injured with 1st, 2nd, and 3rd degree burns. Captain McDonald is in need of immediate ALS intervention. Prior to being treated for their own burns, Engineer (Paramedic) Kreps and Firefighter-Paramedic Smith from Engine 6162 use the ALS equipment from their engine to start two IVs on Captain McDonald.

Engineer Kreps tells Cedar Incident Safety Officer John Simon that Engineer Rucker is an “11-44” at the burn-over scene. Engineer Kreps states that Engineer Rucker was fully involved in fire when he last saw him.

At approximately 1:27 p.m., the first Julian Paramedic Ambulance with Paramedic Yeary arrives at Engine 6162’s location. Captain McDonald is packaged and transported to a landing zone. CDF Copter 202 transports Captain McDonald and Paramedic Valentini to Ramona Airport to rendezvous with a Mercy Air Helicopter at about 1:52 p.m. Captain McDonald is transferred to the Mercy Air Crew and transported to the University of San Diego Burn Center.

CDF Copter 406 transports Engineer Kreps and Firefighter-Paramedic Smith to Ramona Airport at 1:56 p.m. to rendezvous with a Mercy Air Helicopter. Paramedic Yeary treats Kreps and

during the flight. At Ramona, Kreps and Smith are transferred to the Mercy Air Crew for transport to the University of San Diego Burn Center.

References

1. Written statement by John Michelini dated 11-02-03. See tab section 20 of Attachments.
2. Typed statement by Thomas Keating fax date of 11-03-03. See tab section 21 of Attachments.
3. Interview and written statement by Jim Watkins dated October 30-31, 2003. See tab section 24 of Attachments.
4. ICS 214 by Ray Chaney for operational period of October 29, 2003. See Tab section 17 of Attachments.
5. Typed statement by Ray Saucedo. See tab section 56 of Attachments.
6. E-mail from Roger Raines on documenting telephone interview with Michelini and Chandler on November 25, 2003. See tab section 22 of Attachments.
7. Tape-recorded interview with Dan Runnestrand on November 2, 2003. See tab section 23 of Attachments.
8. ICS 214 by Jim Watkins for operational period of 10/29/03. See tab section 24 of Attachments.
9. Tape recorded interview and written statement by Jim Watkins. See tab section 24 of Attachments.
10. Tape recorded interview with John Childe on October 31, 2003. See tab section 50, page eight and 46 of Attachments.
11. Tape recorded interview with John Childe on October 31, 2003. See tab section 50, page 12 of Attachments.
12. Tape recorded telephone interview with Mike Wakoski. See tab section 18 of Attachments.
13. Tape recorded interview with John Childe on October 31, 2003. See tab section 50, page 46 of Attachments.
14. Tape recorded interview with Jim Watkins on October 31, 2003 See tab section 24, page 29 of Attachments.

15. Tape recorded interview with Dan Runnestrand on November 2, 2003. See tab section 23, page 15 of Attachments.
 16. Tape recorded interview with Smith on October 30, 2003. See tab section 27, page 12 of Attachments.
 17. Tape recorded interview with Shawn Kreps on October 30, 2003. See tab section 28, page 11 of Attachments.
 18. Written statement by Captain Michael Carpenter, Vallejo Fire Dept. dated 10/30/03. See tab section 36, page one and two.
 19. Tape-recorded interview with S/T Leader Watkins. See tab section 24 of Attachments page 19.
 20. Tape-recorded interview with Dan Runnestrand in tab section 23 of Attachments page nine. Also mentioned on ICS 214 of Mike Wakoski in tab section 18 of Attachments.
 21. Tape-recorded interview with Hunter Ridenour. See tab section 57 of Attachments.
 22. Tape-recorded interview with Ron Mitchell. See tab section 44 page three and four of Attachments.
 23. ICS 214 for Oct. 29, 2003, by Capt. Carpenter showing arrival at assignment at 1068 Orchard Lane at 11:57 a.m. See tab section 36 of Attachments.
 24. Tape-recorder interview with S/T Leader Watkins. See tab section 24, page 24 in Attachments.
 25. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 26 in Attachments.
 26. Tape-recorded interview with FC John Childe. See tab section 50, page 14 of the Attachments.
 27. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 37 of the Attachments.
 28. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 28 of the Attachments.
 29. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 27 of the Attachments.
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30. Tape-recorded interviews with FF Smith and Engineer Kreps. See tab section 27, page 20 and tab section 28, page 13-14 of the Attachments.
 31. Tape-recorded interviews with FF Smith, Engineer Kreps, Capt. McDonald, and S/T Leader Watkins. See tab section 27, pages 20-21; tab section 28 page 14-15; section 26, page 19 of the Attachments.
 32. See S/T Leader Watkins statements and crew statements in tab sections 24, 36, 37, 38, 39 of the Attachments.
 33. Tape-recorded interview with FC John Childe. See tab section 50, page 16 of the Attachments.
 34. Tape-recorded interview with FC John Childe. See tab section 50, page 51 of the Attachments.
 35. Tape-recorded interview with FC John Childe. See tab section 50, page 16 of the Attachments.
 36. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 29 of the Attachments.
 37. Tape-recorded interview with FC Childe. See tab section 50, page 20 of the Attachments.
 38. ICS-214 for 10-29-03, FC John Childe. See tab section 50, ICS-214.
 39. Tape-recorded interview with FC Childe and ICS 214. See tab section 50, page 32, of Attachments and tab section 50, ICS-214 for 10-29-03 by FC Childe.
 40. Tape-recorded interview with FAE Sanchez. See tab section 51, page 12 of Attachments.
 41. Tape-recorded interview with FC Childe. See tab section 50, page 44 of Attachments.
 42. Tape-recorded interview with FC Childe. See tab section 50, pages 21 and 38 of Attachments.
 43. Tape-recorded interview with FC Childe. See tab section 50, page 53 of Attachments.
 44. Tape-recorded interview with FC Childe. See tab section 50, page 19 of Attachments.
 45. Tape-recorded interview with FC Childe. See tab section 50, page 51 of Attachments.
 46. Tape-recorded interview with FC Childe. See tab section 50, page 26 of Attachments.
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47. Tape-recorded interview with FC Childe. See tab section 50, page 27 of Attachments.
48. Tape-recorded interview with S/T Leader Watkins. See tab section 24, pages 29-30 of Attachments.
49. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 37 of Attachments.
50. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 38 of Attachments.
51. Typed statement by Capt. Carpenter of engine 24. See tab section 36 of Attachments.
52. Tape-recorded interviews with Capt. McDonald. See tab section 25, page three of Attachments.
53. Tape-recorded interviews with FF Smith and Engineer Kreps. See tab section 27, page 21 and tab section 28, page 15 of Attachments.
54. Tape-recorded interview with FF Smith. See tab section 27, pages 25-26 of Attachments.
55. Tape-recorded interview with FF Smith. See tab section 27, pages 21-22 of Attachments.
56. Tape-recorded interview with El Cariso Hot Shot Superintendent Jay Bertek. See tab section 52, pages 11-12 of Attachments.
57. Tape-recorded interviews with FF Smith, Capt. McDonald and Engineer Kreps. See tab section 26, page. five; tab section 27 pages 29-30; tab section 28, page. 18 of Attachments.
58. Tape-recorded interview with FAE Sanchez. See tab section 51, page. 11-12 of Attachments.
59. Written statement by Capt. Scofield on Copter 202, dated 11-02-03. See tab section 59 of Attachments.
60. Tape-recorded interview with FAE Sanchez. See tab section 51, pages 14-15 of Attachments.
61. Supplementary Investigation Report 0-4/c. See tab section 51, Supp. report by Alan Carlson.

62. Supplementary Investigation Report 0-4/d. See tab section 50, Supp. report by Alan Carlson.
 63. Tape-recorded interviews with FF Smith and Engineer Kreps. See tab section 27, pages 30-31; tab section 28, pages 17-18 in Attachments.
 64. Typed statement by Asst. S/T Leader McLaughlin. See tab section 25, page four of Attachments.
 65. Tape-recorded interview with FAE Sanchez. See tab section 51, pages 17-20 of Attachments.
 66. Tape-recorded interview with FC Childe. See tab section 50, page 65 of Attachments.
 67. Tape-recorded interview with Capt. McDonald. See tab section 26, pages four, 14 and 15 of Attachments.
 68. Tape-recorded interviews with FF Smith, Engineer Kreps, and Capt. McDonald. See tab section 27, pages 33; tab section 28, pages 21-23, 42 of Attachments.
 69. Tape-recorded interview with S/T Leader Watkins and his ICS-214 for 10-29-03. See tab section 24, page 48 and ICS-214 last page, in attachment.
 70. ICS-214 by S/T Leader Watkins. See tab section 24, last page of ICS-214 in attachment.
 71. Tape-recorded interviews with Capt. McDonald, FF Smith, Engineer Kreps, and S/T Leader Watkins. See tab section 26, page 31; tab section 27, Pages 35-36; tab section 28, page 41; tab section 24 ICS-214 for S/T Leader Watkins.
 72. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 49 of Attachments.
 73. Tape-recorded interview with FC Childe. See tab section 50, pages 40 and 23 of the Attachments.
 74. Tape-recorded interview with FC Childe. See tab section 50, page 23 of Attachments.
 75. Tape-recorded interview with FAE Sanchez. See tab section 51, page 24 of Attachments.
 76. Written supplemental report by Kevin Johnston with the crew of engine. See tab section 36, supplemental interview first page, Attachments.
 77. Typed statement of Capt. Carpenter. See tab section 36 of Attachments.
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78. (Expansion space holder)
 79. (Expansion space holder)
 80. Tape-recorded interview with Ron Mitchell. See tab section 44, page five of Attachments.
 81. Tape-recorded interviews with Capt. McDonald, FF Smith and Engineer Kreps. See tab section 26, pages 21-22; tab section 27, pages 38-39; tab section 28, pages 26-27 of Attachments.
 82. Tape-recorded interview of Capt. McDonald. See tab section 26, page 6 of Attachments.
 83. Tape-recorded interview of FF Smith. See tab section 27, page 38 of Attachments.
 84. Tape-recorded interview of Engineer Kreps. See tab section 28, page 26 of Attachments.
 85. Tape-recorded interview with FF Smith. See tab section 27, page 39 of Attachments.
 86. Tape-recorded interview with FF Smith. See tab section 27, pages 39-40 of Attachments.
 87. Tape-recorded interview with S/T Leader Watkins. See tab section 24, pages 53-54 of Attachments.
 88. Tape-recorded interview with FF Smith and Engineer Kreps. See tab section 27, pages 41-42; tab section 28, page 27 of Attachments.
 89. Tape-recorded interview with Capt. McDonald. See tab section 26, pages six through eight of Attachments.
 90. Tape-recorded interview with S/T Leader Watkins. See tab section 24, pages 55-56 of Attachments.
 91. ICS-214 from C. Marchisio, see tab section 90 of Attachments. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 56 of Attachments section. Written statement by Ryan Bauer. See tab section 86, page one of Attachments.
 92. Tape-recorded interviews with FF Smith and Engineer Kreps. See tab section 27, pages 42-44, 46 and tab section 28, pages 27-28 of Attachments.
 93. Tape-recorded interview with Capt. McDonald. See tab section 26, page 27 of first interview and McDonald second interview in tab section 26.
 94. Second tape-recorded interview with Capt. McDonald. See tab section 26.
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95. Tape-recorded interviews with FF Smith and Engineer Kreps. See tab section 27, pages 47-48 and tab section 28 pages 28-30 of Attachments.
96. Tape-recorded interviews with FF Smith and Engineer Kreps. See tab section 27, pages 48-50 and tab section 28, pages 31-32 of Attachments.
97. General Message form by Mike Brown. Time stamped on PDA. See tab section 75 of Attachments. Also on ICS-214 by Mike Brown.
98. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 58 of Attachments.
99. Written statement by Plumas Hot Shot FF. Ryan Bauer. See tab section 86, of Attachments.
100. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 59 of the Attachments.
101. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 60 of attachment. Tape-recorded interview with Brian Rhodes. See tab section 64, pages 8-9 of Attachments.
102. Typed statement by Fire Fighter Ryan Stewart, USFS Engine 39. See tab section 66, page two of Attachments.
103. Tape-recorded interview with S/T Leader Watkins. See tab section 24, page 62 of Attachments.
104. Tape-recorded interview with FC Childe. See tab section 50, pages 28, 29 and 44 of the Attachments.
105. Tape-recorded interview with FC Childe. See tab section 50, pages 42 and 43 of the Attachments.
106. Tape-recorded interview with FC Childe. See tab section 50, page 30 of the attachment.
107. Tape-recorded interview with Dozer Operator Jeff Vidrinskas. See tab section 54, page seven of the Attachments.
108. Tape-recorded interview with Jeff Vidrinskas. See tab section 54, pages 11-16 of the Attachments.

109. Refer to IAPs for the Cedar Incident, October 28th and 29th, 2003. See tab sections 202, 204, 205.
110. Supplemental interview with Captain McDonald dated Jan. 20, 2004. See tab section 26 of Attachments.
111. Tape-recorded interview with Fire Fighter Smith. See tab section 27, page 57 of Attachments.
112. Tape-recorded interview with Engineer Kreps. See tab section 28, pages 26-27 and 36-37 of Attachments.
113. ICS-214 from John Childe. See tab section 50
114. Video from John Childe. Evidence item 16P. Also see compilation copy of videos.
115. News station videos. Evidence items 17P, 18P, and 19P. Also see compilation copy of videos
116. Fire Behavior Report and *FARSITE* Executive Summary. See tab sections 252, 253.

FINDINGS

Human Behavior

All four members of Engine Co. 6162 reported to work at 8:00 a.m. on October 27, after all had a full four days off. (Tab Sections 26, 27, 28; Item #224, 147, 148)

In the previous 24 hours, up to the point of the accident, the crew of Engine 6162 acquired six hours of sleep at the incident base (the night of Oct. 28). By rotating drivers, they were able to take additional short periods of rest on the drive to Southern California. (Tab Sections 24, 26, 27, 28; Item #60, 224, 147, 148)

Fire Captain McDonald changes his mind about defending the structure after discussion with the crew of 6162. (Tab Section 26; Item # 224, pg. 3&4)

All four members of the crew of Engine 6162 move to the passenger-side of the engine prior to the command being given to seek refuge in the structure. (Tab Section 26; Item # 238, pg. 21, line 16)

Fire Fighter-Paramedic Smith and Engineer-Paramedic Shawn Kreps immediately react to the order to go to the house via the escape route. (Tab Section 26; Item # 224, pg. 6, line 14)

Engineer Rucker did not immediately proceed to the refuge (house) with the rest of the crew when ordered. (Tab Section 26; Item # 224, pg. 6, line 13)

Captain McDonald noted that Engineer Rucker remained standing near the southeast corner of the engine when the order to seek refuge was given. (Tab Section 26; Item # 224, pg. 7, line 1)

While on the passenger side of the engine, traversing the escape route, Engineer Rucker falls twice. Captain McDonald moves toward him to assist. (Tab Section 26; Item # 224, pg. 7, line 8)

Engineer Rucker falls for the final time on the concrete patio. (Tab Section 26; Item # 224, pg. 23, line 12)

While on the patio Captain McDonald, in an attempt to rescue (drag) Engineer Rucker, turns to face the oncoming fire. (Tab Section 26; Item # 224, pg. 7, line 19 – pg. 8, lines 1-5).

While on the patio, Captain McDonald is subjected to enough heat and flame that he is forced to leave Engineer Rucker and retreat behind the house. (Tab Section 26; Item # 224, pg. 8.)

Equipment

While Engine 6162 suffered minor damage, melted lens and light covers, it remained running at a high idle throughout the event. (Tab Section 246; Item # 101)

There is limited access to the driver's seat, from the other areas of the cab, due to the internal crew compartment configuration of Engine 6162. (Tab Section 118; Photo # W1, W2, W3, W4, W5)

All appropriate PPE was in use. (Tab Section 27; Item # 147, pg. 45)

Captain McDonald was wearing a hot-shield face piece. (Tab Section 27; Item # 147, pg.45)

Engineer Rucker was wearing a hot-shield face piece. (Tab Section 27; Item # 147, pg. 45)

Captain McDonald's web-gear was burned to the point that the contents of the utility bag; appliances, hose clamp and flagging fall to the patio. (Tab Section 115; Photo # DSCN0203)

Captain McDonald removed his remaining web-gear inside of 920 Orchard Lane. (Tab Section 26; Item # 224)

A length of one and one-half inch wildland hose (part of a hose bundle) is found immediately next to the right-side of Engineer Rucker's head, and burn marks on the patio indicate another length of hose was approximately 3 feet from his feet. (Tab Section 115; Photo # DSCN0204, DSCN0207, DSCN0214)

A set of D-rings, grommets and a clasp, representative of the kind used on Novato F.D. hose packs , were found on the ground immediately adjacent to the top of Engineer Rucker's head. (Tab Section 112; Photo # DSCN1039)

The two hose lines attached to the rear discharge of the engine burn through and the tank was pumped dry. (Tab Section 28; Item # 148, pg. 29, para. 3: Tab Section 112; Photo # DSCN 0969, 0970)

Fuel/Weather/Topography/Fire Behavior

The Incident Command Team did not request a spot weather forecast. General weather forecasts were downloaded from a Boise Weather site. (Tab Section 6; Item # 246)

A general weather briefing is given during the operational briefing at the incident base on the morning of October 29. It is read by the PSC. (Tab Section 16; Item # 254, pg 11,12)

A Fire Weather Watch is issued at 9:30 a.m. by the San Diego office of the National Weather Service for increasing gusty southwest to west winds of 15-10 miles per hour in the mountains with locally higher gusts (Tab Section 239; Item #79, pg 6)

Between 9:00 a.m. and 9:15 a.m. on October 29 the fire crosses Hwy 78/79 just west of the Inaja Memorial (Tab Section 22)

At about 11:00 a.m. to 11:30 a.m. the fire burns up the west side of the drainage to the north and east of 902 Orchard Lane. (Tab Section 59; Item # 71, pg. 2, para 2&3)

920 Orchard Lane sits at a high point on the ridge with a chimney/saddle immediately to the north and south of the structure. Fire had been introduced into both these saddles by firing operations. (Figure # 7)

The upper 200 feet of the slope below 920 Orchard Lane is exposed to the prevailing westerly wind due to a saddle on the ridge directly across the San Diego river drainage to the west. (Figure # 7)

In the area immediately west of the accident site there was nearly complete consumption of live fuels and complete consumption of dead fuels with duff consumed to the top of mineral soil and significant scouring of the ground surface leaving only compacted soil and imbedded rocks. (Tab Section 121; Photo # 5, 41)

RAWS data from the Julian Station at the approximate time of the accident indicate sustained winds of 17 miles per hour with a peak gust of 31 miles per hour out of 252 degrees. (Tab Section 239; Item # 200)

Command/Control

Incident Command Team #5 received their transition briefing on October 26. (Tab Section 6)

Incident Command Team #5 assumed management of the incident on the morning of October 27 at 7:00 a.m. The production of the first IAP and operational period briefing completed the transition process. (Tab Section 6,7)

The Incident Command Post and Incident base were moved from Ramona Community Park to El Cajon (Heartland Training Facility and Gillespie Field) during the October 28 operational period. (Tab Section 6)

Span of control for Division I on the October 29 IAP was a ratio of 27 to 1. (Tab Sections 204,205; Item # 36,37)

One of the control objectives identified in the Incident Action Plan for October 29-30 was to “Keep the fire south of Hwy 78 to Hwy 79” (Tab Sections 204,205; Item # 36,37, ICS-202)

The control operations identified on the ICS-204 for Branch III, Division I for the October 29-30 operational period were “Protect Structures and control perimeter as necessary”. (Tab Sections 204,205; Item # 36,37)

Air Tactical Group Supervisor returned three air tankers (due to a perceived communication problem) to base during the period of time the fire crosses Hwy 78/79 at the San Diego River drainage. (Tab Section 56; Item # 171, para. 2)

The Incident Meteorologist, and the Fire Behavior Analyst positions were ordered on October 26 but not filled until October 30. (Tab Section 6, 11)

On October 29, after the occurrence of the burn-over, Division I learns that F.C. Childe, while not assigned to his division, was “doing stuff” (firing out) on his division that was not part of the plan. (Tab Section 23; Item # 154, pg. 15, line 2)

Communications

Strike Team 2005-A was using a VHF high-band radio frequency for a “tactical” or “crew net”. (Tab Section 26; Item # 224, pg. 11, line 16)

Strike Team 1190-K was operating on tactical net “Blue 5.” (Tab Section 55; Item # 213, para 4)

Mike Rodan (Transport driver for LA County Dozer #4) sees an increase in fire behavior and communicates this on “Blue 5” to LA County Dozer #4. (Tab Section 55; Item # 213, Vidrinskis, pg. 21, line 10)

The El Cariso Hotshots were operating on their own tactical net, U.S.F.S. Crew Net. (Tab Section 52 – see Wall supplement)

Jay Bertek (El Cariso Hotshot Superintendent) observes unexplained fire behavior between 902 and 930 Orchard Lane and contacts his hotshots, on their crew tactical net, to exit the ridge and return to the meadow. (Tab Section 52 #, pg. 16, lines 3 to 9).

Air Tactical Group Supervisor is unable to communicate with assigned resources in Branch III in the morning on October 29, due to a perception that the frequencies assigned for air to ground communications were incorrect. (Tab Section 56; Item # 171)

There was one VHF handheld portable radio available to the crew of Engine 6162 at the time of the accident. (Tab Section 26; Item # 224)

Copter 202 attempts, but is unable to talk to Engine 334 @ 902 Orchard Lane on Air-to-Ground frequency. (Tab Section 59; Item # 71)

Division I had to listen to OES White Fire 2 (assigned structure group tactical frequency) because “our communications were so poor” (Tab Section 23; Item # 154, pg 20, line 10)

Division I could not make radio contact with the S/T Leader of 2005-A, Branch III, or Air Ops at the time of the accident due to dead batteries in his hand-held portable radio. (Tab Section 23; Item # 154, pg 12, line 1)

Assigned frequencies in the October 29 IAP; Communication Plan, ICS 205; Air Operations Summary ICS 220; and Branch III/Division I: ICS 204, were consistent. (Tab Section 205; Item # 37)

The only change in the IAP assigned frequencies from the October 28 operational period to the October 29 operational period is the command net which was moved from a simplex frequency to a duplex frequency on October 29. (Tab Sections 202, 205; Items # 35, 37)

The air to ground frequency for the October 28 operational period was handwritten onto the ICS-205 in the IAP, and no Air to Ground frequency was listed on the ICS-204 for Branch III. (Tab Section 202; Item # 35)

Strike Team leader Watkins attends the morning operational period briefing at the ICP. The crew of Engine 6162 does not attend. (Tab Section 24; Item # 150)

While at the ICP Strike Team Leader Watkins briefs Strike Team 2005-A regarding the operational period assignment and relevant safety information. (Tab Section 24; Item # 150)

Division I provides Strike Team Leader Watkins a briefing on the fire activity the day before, what was occurring that day, and what to expect. (Tab Section 24; Item # 60)

FAE Sanchez does not have a portable radio at 902 Orchard Lane. (Tab Section 51; pg 12)

Deputy Branch III contacts Air Tactical Group Supervisor on Air to Ground frequency following burn over. (Tab Section 17; Item # 214)

Situational Awareness

During the morning of October 29 the crew of Engine-6162, Strike Team Leader Watkins, and Engine-24 have several opportunities to observe the fire behavior in the area of the Inaja Memorial and the San Diego River drainage. The behavior was described as moving slowly with the wind, backing down slope, with the column rising approximately 1000 feet then bending to the east. (Tab Section 24; Item # 150. pg. 15. line 20)

The El Cariso Hotshot superintendent observes unexplained fire behavior and increased spotting in the area of the meadow and subsequently pulls his crew out. (Tab Section 52; pg. 16)

The LA County bulldozer transport driver observes increased fire behavior and communicates it to the LA County bulldozer. (Tab Section 55; Item # 213, para 4)

Fire Captain McDonald initially did not think the structure at 920 Orchard Lane was defensible based on his observation point from the 90-degree turn in the driveway. (Tab Section 26; Item # 224, pg. 3,4)

In order to avoid scratching the paint on Engine 6162, the driveway at 920 Orchard Lane needed to be brushed in order to back the engine up the driveway. (Tab Section 28; Item # 197)

The crew of Engine 6162 believes the fire will approach 920 Orchard Lane from the north. (Tab Section 26; Item # 224, pg. 18, line 14)

While at 920 Orchard Lane, the crew of Engine-6162 observes a seven to 10 mph wind coming from the southwest. (Tab Section 27; pg 25,26)

Captain McDonald recognizes that there is heavy brush below and to the west of 920 Orchard Lane. (Tab Section 26; Item # 224, pg 6, line 8)

Prior to the decision to go into the structure, the crew is exposed to intensified levels of heat, which causes them to move around to the passenger side of the engine and use it as a shield. (Tab Section 26; Item # 224, pg. 21, line 14.)

At about noontime on Oct 29, eyewitness Mitchell, who lives at 1126 Orchard Lane, observes the wind shift out of the west as the fire moves down into the canyon bottom and “starts shooting up” to the north of his position. (Tab Section 44; Item # 153, pg 4).

After the blowup, Division I is surprised the fire is so far south on the ridge along Orchard Lane. He expected it to come from the north. (Tab Section 23; Item # 154, pg. 18, line 21)

Strategy / Tactics

The firing operation from Pine Hills Road to the town of Santa Ysabel is not completed as of 6:00 a.m. on the morning of October 29. The uncompleted section stretches from the Inaja Memorial to Santa Ysabel. (Tab Section 20; Item # 62, pg 2, para. 3)

At 11:55 a.m., Strike Team 2005-A resources are assigned to structures along Orchard Lane. (Tab Section 24; Item # 60)

Engine 6162 was initially spotted by the steps leading to the patio at 920 Orchard Lane, by the southwest corner of the house. The engine was then moved in a backwards (southward) direction to facilitate burning a debris pile. The final resting place of the front bumper was approximately 35 feet to the south from the patio steps. It remained there until moved during the crew’s escape down the driveway. (Tab Section 26; Item # 224, pg 5)

The crew of Engine 6162 deployed three, one and one-half inch hose lines (two, 100-foot protection lines from the wyed rear discharge and one 30-foot hose from the front bumper discharge). (Tab Section 27; Item # 147, pg. 29)

The crew of Engine 6162 removed the grass, down slope and to the west of the engine, by burning out. (Tab Section 27, pg 33 : Tab Section 28, pg 21-23)

The crew of Engine 6162 burns brush piles to the west of the engine. The crew moves further down the slope and continued to enlarge the burned out area to the west of structure. They conclude this burning operation by throwing 10 to 12 fusees even further down the slope, into the brush, west of their position. (Tab Section 26; Item # 224)

Independent firing operations took place around and between; 902, 920, 930, & 1038 Orchard Lane. Personnel not assigned to the Branch or Division I conducted these. (Tab Section 23; Item # 154, pg. 15)

Other

The crew of Engine 6162 originally identified the meadow, east of Orchard Lane, as a safety zone prior to being assigned to 920 Orchard Lane. (Tab Section 26; Item # 224, pg. 6, lines 8-10)

Once at 920 Orchard Lane, Captain McDonald identifies the house as a refuge, with the escape route being the patio. (Tab Section 26; Item # 224, pg. 6)

Although personnel in the Orchard Lane area were observing fire behavior, there was no **assigned, dedicated**, lookout for Branch III, Division I, the Orchard Lane area, Strike Team 2005-A, or Engine Company 6162. (Tab Section 23; Item # 154, pg. 22, line 28)

There was no ICS 215A completed for the October 29 operational period. (Tab Section 16; Item # 254, pg 12)

The incident safety message on October 29 was repeated from the previous operational period. (Tab Section 203; Item # 11)

A hedge of Boxwood bushes, (approx. forty feet long and up to four feet high, in a raised rock wall that is three feet tall), alongside Engine 6162 ignites and exposes the retreating crew to direct flame and heat. (Tab Section 27; Item # 147, pg. 39, para. 1)

CAUSAL FACTORS

Any behavior, condition, act, or omission that starts or sustains an accident occurrence. Avoiding or eliminating would prevent the occurrence.

Due to fire establishing itself north of Highway 78/79, along the west side and across the north end of the San Diego River drainage, the decision was made to re-position ground resources and to defend the structures along Orchard Lane, including the decision to deploy at the structure at 920 Orchard Lane.

This action positioned resources on a ridge top (downwind from the fire for the predicted gradient westerly wind) with unburned fuel between them and the fire and without the ability to see the fire as it progressed into and through the drainage. The resources assigned to Orchard Lane felt the fire was going to be approaching from the north and northwest and were basing their actions on that expectation.

This also created a transitional situation as the resources changed geographical areas and tactical environment. The most notable changes were from direct perimeter control and mop up around structures to one of structure defense on and near a ridge top with unburned fuel below them.

The flank of the main fire transitions with a slope reversal accompanied by a temporary wind shift that, by mass transport of embers, introduces fire into a receptive fuel bed below the resources along the ridge. As this fire continues upslope the westerly winds, which were not significant in the canyon bottom, intercept the fire near the ridge top and change the fire from a flanking fire to a head fire and push a convective column from near vertical to near horizontal.

Captain McDonald and Engineer Rucker did not immediately proceed to the refuge (house) when the order was given.

The full reason for the delay may never be fully explained. Engineer Rucker fell three times, as he and Captain McDonald proceeded along the escape route.

There was no **assigned/dedicated** lookout for operations on Orchard Lane.

Although resources assigned to operations along Orchard Lane were observing the fire from their individual vantage points there was not a specified lookout in position to observe and communicate the status of the flanking fire's progress into the drainage, or the establishment of the fire on the west facing slope of the drainage.

CONTRIBUTORY FACTORS

Effected the occurrence or outcome but was not causal. Avoiding or eliminating would not necessarily prevent the occurrence.

The firing operation from the Inaja Memorial to Santa Ysabel was not completed on the morning of October 29. It was in this area that the fire jumped Highway 78/79 and established itself in the San Diego River drainage on the north side of the highway.

At the time the fire crossed Highway 78/79 between the Inaja Memorial and Santa Ysabel, aviation assets that were assigned in the Branch III area, including three fixed-wing air tankers, had been returned to base due to the inability of the ATGS to contact ground resources.

Engine 6162 was originally placed to shield the portion of the escape route across the patio to the southeast corner of the house. To facilitate the burning of brush piles, the engine was moved further south. The net result was not only an increase in the overall travel distance along the entire escape route, it also increased the distance that would need to be covered without the shelter the engine had provided. This exposed the crew to intense thermal and convective conditions for a longer duration while traveling the escape route.

An independent firing operation was conducted at 930 Orchard Lane, south of Engine 6162's location. The firing operation appears to have had an effect in drawing both the main fire and the fire at 930 Orchard together near the accident site, and likely caused a minor but potentially significant decrease in the amount of time available to react to the changing conditions. Simulations run without the firing operation indicate that one to two minutes of additional spread were likely needed for fire to impinge on the accident site.

It had been the practice on this incident to identify operational safety concerns as the dynamics of the operation changed. The safety concerns were communicated from the Safety function to the Operations/Branch and Division/Group level at the daily operational period briefing. These functions then verbally communicated both the operational assignments and the safety message to the ground resources during tailgate briefings at various locations on the incident. The incident Safety Officer read the safety message at the operational period briefing on the morning of October 29 and specifically discussed were the subjects of previously exhibited fire behavior and changing wind direction. There was not an ICS 215-A completed for the October 29 operational period, however, there was a generic safety message contained in each ICS-204 (Division Assignment List) as part of the IAP. This safety message directed resources on the line to identify and mitigate hazards.

The fact that all of the crewmembers of Engine 6162 were wearing all of their Personal Protective Equipment, including nomex shirt/trousers, gloves, helmet with chinstrap, goggles, protective shroud and Hot Shield devices (only Captain McDonald and Engineer Rucker had Hot Shields) substantially lessened the severity of their injuries. Without this protection in place it is doubtful that the rescue attempt by Captain McDonald, the travel to the engine by Engineer

Kreps, and the eventual escape in the engine could have taken place without more serious injuries.

CIRCUMSTANCES

Travel, Rest, and Activity History

At approximately 7:00 p.m., on the evening of October 27, 2003, the Novato Fire District receives notification from Woodacre Emergency Communications Center (Marin County) that it is to send a Type III engine to Southern California to assist with the current wildland fires. A four-person crew consisting of Captain McDonald, Engineer Kreps, Engineer Rucker and Firefighter-Paramedic Smith are assigned to staff engine 6162 from an established rotational list.

During the intervening period prior to actual dispatch at 9:27 p.m., the crew begins to collect the items they will need for an extended assignment. The crew has just returned to shift, at 8:00 a.m., that morning, from a four-day break. None of the crew has worked any extra shifts during the preceding few days. That day, Novato fire crews have had a light to moderate call volume by recount of the on-duty battalion chief. None of the members have any significant record of sickness or injury from the previous weeks.

Engine 6162 is officially dispatched at 9:27 p.m. by Marin County Communications and leaves Station Four headed to Southern California. They travel to the truck scales on eastbound Highway 580 in Livermore where they rendezvous with the task force leader and the majority of the engines that are to compose Task Force XAL 2005A. All units leave the area at 12:00 a.m. (now October 28) with the exception of an additional engine from Vallejo that is scheduled to meet with the rest of the task force in Santa Nella. A final engine is added to the task force when they arrive at Cedar Base

According to the strike team's ICS 214 form and the statements of Firefighter-Paramedic Smith and Engineer Kreps, the task force makes several pauses for fuel and rest stops along the drive to the Cedar Fire incident base (fuel is received at Santa Nella, Interstate 5/Highway 41, Pasadena). The crew of engine 6162 rotates drivers approximately every 100 miles between Engineer Kreps, Engineer Rucker and Firefighter-Paramedic Smith. XAL 2005A arrives at Gillespie Field incident base at 11:00 a.m. on October 28. After check-in with the Resource Unit they are directed to the Incident Base for food and rest. During this period, Engine 71 (Camp Parks) is added to the task force to give them a total of five engines. XAL is now designated as a strike team with a strike team leader and assistant leader.

Assignments on October 28, 2003

At 1:15 p.m., on October 28, 2003, Strike Team XAL 2005A is sent to the area of the intersection of Interstate 8 and Highway 79. Near that location they undertake a structure protection assignment on Riverview Road ("Camp Oliver") where they support a burnout operation. They are told to hold in the area until 9:30 p.m. that evening to patrol for hot spots.



Photo taken by the crew of Engine 6162 during the first night of activity.

The crew returns to the Gillespie Field staging area at 10:00 p.m., where they eat dinner and bed down for the evening. Engine 6162 members go to sleep between 10:30 p.m. and midnight. They arise between 5:00 a.m. and 6:30 a.m. the morning of October 29. By all accounts, they feel rested and are in good spirits. While the strike team leader attends the morning briefing (7:00 a.m.), the crew eats breakfast and completes the typical morning checks on the engine. The pump is run, the pre-trip brake check is completed, and a general check for operational readiness is conducted. At 8:30 a.m., XAL 2005A departs staging and heads for their Branch III, Division I assignment

Weather

A Fire Weather Watch was issued at 9:30 a.m. on October 29 by the San Diego office of the National Weather Service for increasing gusty southwest to west winds of 15-10 miles per hour in the mountains with locally higher gusts. The winds were to have increased further during the night time hours and into Thursday with gusts of 45 to 50 miles per hour with humidity's below 15 percent. Later in the afternoon of October 29 (after the accident) the Fire Weather Watch was upgraded to a Red Flag Warning.

RAWS data from the Julian Station at the approximate time of the accident indicates average 20-foot winds of 17 miles per hour with a peak gust of 31 miles per hour out of 252 degrees, with a temperature reading of 74°F and 34% relative humidity.

Personal Protective Equipment

The use of personal protective equipment (PPE) by all of the crew members of Engine 6162 clearly minimized the injuries to the three surviving crew members. Eyewitness accounts of the accident site and video taken earlier in the day, along with the documented removal of PPE at the medical treatment site, indicate that all of the PPE was being worn before and during the event. The items in the PPE ensemble included: helmet with chinstrap, goggles, protective shroud, Hot Shield devices (Captain McDonald and Engineer Rucker), nomex shirt with sleeve liners and pants, web gear with fire tent shelter, drinking water, gloves and wildland boots

Training and Experience Records Summary

Review of all Training Records and past incident assignments where available, indicate that nearly all personnel had received the appropriate position and ancillary training necessary for their particular assignments on the fire. All operations or line personnel involved with the fatality incident have had both positional training and functional experience. No training gaps were found.

There are a few exceptions for Incident Command Team (ICT) personnel, but those lacking positional training have had previous functional experience. The notable exception was ICT Safety Officer John Simon. Safety Officer Simon has not had the 400 level Safety Officer training required for major command team assignments, only the 200 level (S-204) class. Simon has had Safety Officer experience on a number of assignments.

All personnel on Engine 6162 had appropriate positional job training. Experience records provided were in the form of dispatch records, which list the personnel, dates, times and the general type of response. Experience records received show the majority of wildland calls had been for grass or light vegetation, although the run-cards do not contain sufficient information to support this conclusion. All of the Engine 6162 crew have had training in wildland urban interface firefighting and fire behavior.

All line personnel including the Strike Team Leader for XAL-2005A, the Division Group Supervisor, and Branch Directors have had the correct positional training including intermediate fire behavior.

SITE CONDITIONS

Topography and Fuels

The hillside west of the accident site has west-facing slopes ranging from 20-40 percent. The uniform fuel complex is was dominated by a well-developed herbaceous brush mix with 90 percent crown closure, under a live oak canopy that averaged approximately 20 feet tall and ranged from 30-90 % cover. The live fuel components were well below critical levels (what was %). The dead component is estimated as light to moderate, approximately 30 percent.

Fire history for the area was not complete and it is estimated the last fire through the area was 50 to 60 years ago.

During the 36 months previous to the accident the area has only received between 50-70 percent of normal precipitation. The Palmer Drought Index shows a preliminary drought (index of – 2.88) with 2.07 inches of precipitation necessary to emerge out of the drought condition.

The relative orientation of the San Diego river drainage below the accident site is NNE to SSW. The elevation where the drainage crosses Highway 78/79 is approximately 3,440 feet. The elevation at the head of the canyon is 4,136 feet and the elevation at the accident site is 3,822 feet.

The ridge along the west side of the San Diego River drainage ranges from 3,723 feet to 3,678 feet. Directly west of the accident site there is a saddle that drops to approximately 3,600 feet.

The accident site is on a high point along the ridge with a chimney/saddle immediately to the south (between 920 and 930) and immediately to the north (between 920 and the 914 site). The garage and 90-degree turn in the driveway are in the northern saddle.

Improvements and Building Condition

The accident site house at 920 Orchard Lane was a one-story 2,045 square foot single-family dwelling built in 1977. It was located on a four-acre parcel on the top of the ridge, 300 feet west of, and 69 feet above, Orchard Lane. The layout of the house was basically a rectangle 23 feet wide and 78 feet long, with the long dimension oriented approximately parallel to the ridgeline. The northern end of the long dimension was oriented towards the north-northeast (referred to as north for reference and discussion). The north end of the house included a 31-foot diameter hexagonal area with a stone chimney in the center, which is the prominent feature visible in post-fire photographs. The concrete driveway from Orchard Lane ends at the north end of the house. The unimproved dirt surface driving or parking area, which varies in width from 15 feet to 35 feet, extends for a total of 150 feet south from the end of the driveway along the entire west side of the house and extending 75** feet south of the house along the patio and flower garden (** measurements “from the house” refer to distances measured from the exterior wall of the house).

The exterior house construction consisted of stucco walls and a combination of roof coverings consisting of composition shingle and flat rolled roof covering.



Photo from the 2001 Lis family video of 920 Orchard showing the combination roof covering style, the house front door, the unimproved dirt surface driving area, and the landscape vegetation as it existed in 2001*

A wooden deck, approximately one to three feet above the ground, extended for 19 feet to the north and northeast off two sides of the octagonal portion of the house. On the east side of the house, a wooden deck walkway extended south of the main deck area between the house and large boulders to the rear door.

* **NOTE:** All photos from the “Lis family video” are still images captured from the original VHS video. The approximate date of filming was June 2001. Any changes in conditions, such as reduction in the amount of vegetation, during the three years between the video filming and the fire are not reflected in the photos.



Photo from the 2001 Lis family video showing the east side of the house looking northeast at the eastern portion of the main wooden deck from the wooden walkway. The northern end of the large boulders is shown on the right side.

From the rear door, the walkway continued south 48 feet as a concrete path, connecting the rear door to a 14 by 28 foot concrete patio on the south end of the house. The patio was surrounded on the south and west sides by a planter strip with a continuous juniper hedge (see description below) and a rock wall two to three feet above grade level. A flower garden approximately 30 by 40 feet in size extends south of the patio and rock wall. Concrete and stone steps on the west side of the patio lead down to the dirt parking area where Engine 6162 was parked, two to three feet below the level of the patio.

A detached garage was located 80 feet north-northwest of the house on the west side of the driveway. It was a 25-foot by 25-foot wood-frame stucco structure with doors facing north.



Photo from the 2001 Lis family video showing the east side of the house looking northeast at the wooden walkway to the deck and the northern end of the concrete walkway. The back door is to the left at the top of the stairs. The kitchen is through the sliding glass doors.

Brush Clearance

The vegetation fueling the wildfire, which burned in the immediate vicinity of 920 Orchard Lane, may be characterized in two groups – managed landscape plantings (described below) and relatively unmanaged brush and oak wildland fuels. The heavy brush and oak wildland fuel bed is fully described in the *Fire Reconstruction...Executive Summary* (Tab Section 251) and the *Fire Reconstruction...full report* (Tab Section 252). Extensive clearance of this wildland brush existed in all directions around the house. Downhill, in the direction of the fire approach to the west, the wildland brush began approximately 160 feet below the northwest corner of the house. There was 180 feet of brush clearance downhill from the southwest corner of the house where Engine 6162 was located. There was no evidence of recent brush clearance activity, such as cut brush stumps, in the large cleared area below the house. Fuels in this area, which measured approximately 170 feet deep and 200 feet along the driveway, consisted of light grass stubble closer to the brush and oak leaf litter or cleared ground closer to the house.



Photo from the 2001 Lis family video looking southwest from the dirt driveway at the southern end of the large brush clearance area below the house. The image is recorded from the general area of where Engine 6162 was parked.

To the south of the house the brush clearance extended approximately 100 feet, or approximately 40 feet behind Engine 6162. There was approximately 70 feet of brush clearance east of the house, which was the leeward side of the house during the entrapment. Due east from the northern end of the house, beginning approximately 30 feet east of the house deck, a large unburned island of oaks extends along the south side of the driveway down to Orchard lane, an area approximately 280 feet long by 50 feet wide (see Figure 4). There was no consumption of the oak tree canopy in this area and only partial burning of the surface fuels. In this area closest to the house, the unburned surface fuels consisted of oak leaf litter. The grass, if any, had been cleared and there were no ladder fuels below the tree canopies. To the north of the house the brush fuel bed began along the north side of the driveway, 115 feet north of the house.



Photo from the 2001 Lis family video looking southeast from the dirt driveway. Brush clearance to the south of the house just visible to the right of the large boulder. The box hedge and rock wall next to where Engine 6162 was parked is in the center of the image.

Landscape vegetation

There was extensive management of the vegetation and grounds for approximately 70 to 180 feet around 920 Orchard Lane. The most prominent feature of this landscaped area was the large cleared area west of the house in the direction of fire approach. This area can be easily seen in Figure 9, the pre-burn accident site aerial photograph taken in July 2000. Forty-five feet west of the house front door was an herbaceous hedge bordering the driveway with a rock path leading down several steps to a relatively flat garden area approximately 30 deep and 50 feet long parallel to the driveway. This garden was at the northeastern end of large cleared area and contained well-separated herbaceous plantings, small woody shrubs and a few small fruit trees. On the west side of the house on either side of the front door were several two to four foot tall shrubs. South of the front door were two large shrubs reaching to the roofline (visible in Lis family video photo of the front door above), and a 20 to 30 foot tall oak tree towards the southwest corner of the house.



Photo from the 2001 Lis family video looking northwest at the garden west of the front door. The image is recorded from the rock path / steps (shown in Figure 2) leading through the herbaceous hedge.

The patio on the south end of the house was surrounded on the west, south, and east sides by a juniper hedge. The linear burn pattern along the south edge of the patio concrete appears to indicate that the juniper hedge was continuous, and encroached approximately one foot over the southern patio surface. It also extended around both southwest and southeast corners of the patio and on both sides of the steps to the driveway. The perimeter of the hedge, as estimated from patio burn patterns, is shown on Figure 2 and Figure 4. The extent of recent pruning of the Juniper hedge is unknown and the height of the hedge is not estimated. A tall cylindrical shaped Juniper-like coniferous shrub was planted in each of the “tree well” planting boxes shown at the two corners of the patio in Figure 4. The canopy of a 16-inch diameter oak tree covers the entire patio as shown in aerial photograph Figure 8.



Photo of the accident site patio at the south end of the 920 Orchard Lane house. Juniper hedge stumps can be seen between the southern edge of the patio and the rock wall on the right, and in the triangular planting area adjoining the eastern end of the patio. One of the two shrub stumps located in the “tree wells” (shown in Figure 4) can be seen at the top of the photo. The concrete patio burn pattern, indicating the presence of a continuous Juniper hedge encroaching over the patio, is shown along the right edge of the patio*. The concrete patio burn spall marks indicated in Figures 4 & 5 can be seen around the memorial items in the center of the picture (photo reference - Foote item #51 Tab Section 122).

Along the east side at the rear of the house most of the landscaping had been recently removed leaving two grape vines and some wisteria all of which had lost it's foliage by the time of the fire. A large rock outcropping adjacent to the house, approximately 20 feet in diameter and six to 10 feet in height, extended from the area of the back door to the southeast end of the wooden deck.

A row of approximately five-inch diameter shrubs lines what would have been the northern edge of the wooden deck (see white steno pad in photo #12:20). With the wooden deck extending past the cinder blocks, this hedge would have created a continuous fuel bed from the landscape

* For additional Juniper hedge burn pattern images see: Tab Section 108 photo item number 25; Tab Section 110 photo item numbers 24, 53 & 59; and Tab Section 115 photo item number 66.

vegetation to the readily ignitable structural materials of the house deck. The landscaped area in the 110 feet north of the house to the driveway was denser than elsewhere on the property. Another row of burned out shrubs lines the southern edge of the driveway directly north of the house. The June 2001 video photograph of the driveway shows continuous surface fuels to the right of the driveway looking north, although some of this could have been pruned in the intervening years. There is 90+% closure of the conifer and oak tree canopy over this area. There are also rock retaining walls, paved walking paths, and patio areas throughout the area with patches of unburned surface fuels.



Photo from the 2001 Lis family video looking north at the driveway. Continuous, heavy, landscaped surface fuels can be seen on the right side of the driveway above and in the post fire photo (Tab Section 108 photo item #41) of the same area.

Equipment

Engine 6162, is a series 2000 International similar to a CDF model 14. Engine 6162 outfitted with a four person cab, 500 gallon tank and 500 GPM pump, is nine feet eight inches wide, 24 feet long, and nine feet four inches tall, with a wheel base of 160 inches. It has a documented mileage of 10230.6 corresponding to 897.9 engine hours. These figures were recorded once the engine was returned to the Novato Fire District from the Cedar incident. The truck log book as

of October 26, 2003 indicates a mileage of “9558.” There are no recorded figures for the subsequent days of the incident

Road Conditions

Orchard Road leads directly from Highway 78/79 and proceeds in a generally straight path toward the north. Orchard Road is the access route that leads directly to the driveway of the accident site (920 Orchard) and terminates at the driveway of 902 Orchard Road at its northernmost point. The road has a small turnout opposite and just south of the driveway of the accident location. From the intersection of Highway 78 to the driveway of the accident location, it measures 0.8 miles. The distance to its endpoint at 902 Orchard is 0.9 miles. The road varies in width from approximately nine feet to 14 feet. It is unimproved other than gravel over compacted dirt.

The driveway to 920 Orchard forms an approximate 43 degree angle with the main road and proceeds initially in a northwest direction. The 490 foot concrete driveway continues upslope where it terminates near the northwest corner of the residence along the ridgeline. The overall slope from beginning to end of the concrete section is 16 percent with the steepest point being approximately 20 percent. The driveway is nine feet wide and is lined with brush and trees on both sides.

As it continues upslope, at the 60 foot mark the driveway makes a turnout to the north and proceeds back in a westerly direction to the 110 foot mark. This turnout coincides with the steepest slope of the run. This deviation combined with a culvert that exits to the north edge of the concrete drive in this turnout makes traversing this portion with an engine a slow and calculated process. At the top of the ridgeline, the driveway forms a sharp right angle where it finally terminates near the northwest corner of the house. At the final portion of the curve, a short section exits and proceeds to the detached garage.

At the end of the concrete section, the driveway continues along the ridgeline and proceeds along the west face of the house. This section of the driveway is an unimproved dirt surface and proceeds 150 feet in a south-southwest direction before it terminates just past the concrete patio.

Two driveways lead to 902 Orchard Road (to the north on Orchard Road from 920 Orchard) and ultimately join along the ridgeline. The overall effect of the driveway is to circumferentially wrap the property. It is a primarily dirt surface. There is little vegetation to either of its immediate edges.

The driveway to 930 Orchard Road (the next residence south of 920 Orchard Road) proceeds upslope to the residence and ridgeline. It is entirely surfaced in blacktop and is lined on both sides by dense brush. The brush is sufficiently thick that it encroaches upon the driveway.

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DESCRIPTION OF SUPPORTING DATA

Supporting Data-Book 1 (Section Tabs 1-100)

- Witness Accounts Table
- Witness Statements
- Witness Interviews

Supporting Data-Book 2 (Section Tabs 101-150)

- Physical Evidence
- Visual Documentation
- Photographs
- Videos (See compilation)
- Graphics - Maps, Sketches
 - See *Review Report* graphics section (11"x17")
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Supporting Data-Book 3 (Section Tabs 151-200)

- Table
- Training Records
- Experience

Supporting Data / Supplemental Information-Book 4 (Section Tabs 201-258)

- Other Incident Records
- Diagram of Injuries
- FARSITE* Executive Summary
- FARSITE* Technical Report
- Fire Behavior Analyst Report
- Green Sheet
- Blue Sheet
- Glossary